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PRICE NINEPENCE

Sir Gilmour Jenkins

A NOTABLE personality in the transport world will retire at the end of this month: he is Sir Gilmour Jenkins, Permanent Secretary of the Ministry of Transport. Although Sir Gilmour necessarily lacked the wide experience of all forms of transport acquired over the inter-war years by Lord Hurcomb, whom he succeeded on the latter's appointment to the chairmanship of the British Transport Commission, he nevertheless—as is customary in the Civil Service—quickly adapted himself to the duties attaching to his office. Indeed he subsequently took in his stride the additional responsibilities resulting from the merging of the Ministries of Transport and Civil Aviation in October, 1953. Twelve months later, after serving for three years on the council of that body, he became president of the Institute of Transport, a role which he fulfilled with aplomb and distinction. He had already gained experience on the shipping side as an assistant secretary in the Marine Department of the Board of Trade when, at the outbreak of war, he was appointed Second Secretary of the newly formed Ministry of Shipping, and his connection with the Ministry of Transport began with the amalgamation of the two departments to form the Ministry of War Transport in 1941, when he became a Deputy Director-General under Sir Cyril Hurcomb, as he then was. After the war he served for a brief period as Permanent Secretary of the Control Office for Germany and Austria, and he had attained the rank of Joint Permanent Under Secretary of State at the Foreign Office when he returned, in 1947, to assume charge of the Ministry of Transport. Awarded the C.B. in 1941, he was created K.B.E. in 1944 and K.C.B. in 1948. He will be missed in the industry where he has become a well-known and popular figure and famous as a resourceful and entertaining after-dinner speaker.

The Institute Dinner

THE family party atmosphere generated by annual Institute of Transport dinners was fully sustained at last week's function at the Dorchester. As usual there were but two speeches before the cabaret and dancing, and both were in humorous vein. Lord Simon, telling the story of the secretary who, asked to secure a witty speaker, replied that he had done equally well by engaging two half-wits, said that as the first he was delighted to propose the toast of the Institute. It was he who reminded the assembly of the Institute's approaching fortieth anniversary, a milestone attained by this newspaper on the very day the dinner was held. Responding "as the other half-wit" the president, Major-General G. N. Russell, said he had found enthusiasm among all classes of the membership during his tour of the local sections but had gained the impression that there was still a need to encourage the younger men in the industry. As is customary, the president revealed the name of his successor, and loud applause greeted that of Mr. R. G. Grout. The distinction is well deserved, for besides enjoying prominence in the shipping industry—he is also connected with commercial aviation—Mr. Grout has been indefatigable in his work for the Institute and in disseminating its virtues among shipping men. In fact, it was he who was largely responsible for the initiation of the annual shipping lecture which today figures prominently in its proceedings. When he takes office in October Mr. Grout can be sure of the good will and support of the wide circle in which he is deservedly popular.

An Ill-timed Threat

SURPRISE and apprehension are expressed in a letter which Sir Brian Robertson, chairman of the B.T.C., has addressed to Mr. S. Greene, general secretary of the N.U.R., in response to that union's threat to withdraw from British Railways joint consultative machinery. The Commission, he says, were astonished and deplored it. Certainly, it was totally unexpected and will, if pursued, jeopardise the progress and

success of the whole modernisation plan. The reason given for it—non-acceptance of the closed-shop principle—is fantastic and exasperating. Sir Brian, in his letter, recalls that he has often gone out of his way publicly to acknowledge the help he has received from the railway unions and the importance he attaches to their co-operation; for its part, the Commission has safeguarded the special position of the three unions in their negotiating rights. He points out what must now be obvious to the most obtuse-minded—that the railways are going through a major crisis to which neither management nor unions

be adopted. Completion is envisaged by 1961 or 1962 and cost may be around £190 million. Some 62 miles of right-of-way have to be built in the vicinity of great cities and there are several tunnels, of which the New Tanna is 4.9 miles long. It is expected that by 1975 there will be 12,365 million passenger-miles generated on the new line, compared with 7,955 million in 1964, while the traffic on the existing line will increase to 7,705 million from 6,339 million in the same period. The ton-miles of freight are estimated as 2,236 million by the new line in 1964 and 3,169 million in 1975, while the present line

CURRENT TOPICS

LEADING FEATURES IN THIS ISSUE

Portrait	PAGE		PAGE
Mr. R. G. Grout, M.Inst.T.	9	Interesting Bridge Replacement: Lifting In Spans with Wagon Gantries	12
Special Articles		Trunk Railway Project in Japan: Adoption of 4 ft. 8½ in. Gauge: Maximum Speed of 155 m.p.h. Contemplated	13
A New Phase in Road-Rail Competi- tion	2	Regular Features	
Urban Motorways: Review by Lieut.- Col. G. W. Kirkland	3	Book Notices	9
Express Container Trains: Start of London—Glasgow Service	5	Commercial Aviation	9
Road Transport Clearing Houses: Denationalisation Optimism at Luncheon	5	Financial Results	16
N.U.R. and Consultation: B.T.C. Chairman and Withdrawal	5	Forthcoming Events	2
Golden Jubilee Celebrations: London Programme of R.S.A.	5	Important Contracts	16
Lancashire United Transport's Half- Century of Progress: Motor Buses in an Industrial Area	6	In Parliament	9
		Lorry, Bus and Coach News	4
		News from All Quarters	8
		Road Vehicle Industry	11
		Shipping and Shipbuilding	16
		Social and Personal	15
		Tenders Invited	16

should close their eyes, that the basic object of both is the industry's prosperity and, whatever differences either side might have, they should do nothing to undermine public confidence or imperil the future of the railway industry. Although co-operation and fruitful consultation cannot be enforced by agreement he hopes that these wider considerations will influence the N.U.R. executive to reconsider their decision. It would seem that this is another case of the tail wagging the dog and it is to be hoped that, armed with this explanation of the situation, moderation will triumph over extremism. The threat is supposed to come into force from the end of June, but Sir Brian reminds the union that the agreement on consultative procedure requires joint notice of termination by all three railway unions and that 12 months' notice must be given. Observance of this clause should allow time for better counsels to prevail.

Ambitious Japanese Project

ELSEWHERE in this issue we describe an ambitious project by the Japanese National Railways for an entirely new trunk line on the Tokaido route between Tokyo and Osaka, a distance of over 300 miles. For this venture it is proposed to abandon the Japanese gauge of 3 ft. 6 in. and employ the international standard of 4 ft. 8½ in. gauge with a view to maximum speeds of 155 m.p.h. for passenger and 93 m.p.h. for freight service, thus reducing the 6 hr. 50 min. time between the two cities for passenger trains to 3 hr. and the freight train time of 11½ hr. to 5½ hr. Piggyback freight operation for door-to-door transit will be provided. Electric multiple-unit railcars and electric locomotives are proposed for the respective services. The minimum curve will be of 8,200 ft. radius and the steepest gradient 1 in 100. There will be no level crossings, thereby avoiding a bugbear of the existing route. Stations will be widely spaced but where necessary will offer interchange with the existing Tokaido Line. The 25,000-volt single-phase a.c. electric traction system may

will develop from 7,581 million in 1964 to 10,563 in 1975. Estimated cost of operation on the projected line is slightly higher for passenger traffic and lower for freight. The cost of road transport on the superhighway is expected to be 30 to 70 per cent higher for passengers and some six times higher for freight. The Japanese authorities believe there will be a handsome return on the investment. Since such high speeds are contemplated on orthodox track, which nevertheless does not provide for through running with the rest of the system, one wonders whether the use of some specialised railway construction, such as the Kearney, with only one bearing rail, and elimination of lateral oscillation, has been considered.

Diesels for Ship Canal Railway

AS a score of years has passed since the diesel shunting locomotive found widespread favour with industrial users, it might appear curious that the largest undertaking of its kind in this country, the Manchester Ship Canal Company, has only recently taken delivery of its first diesel locomotive, a Hudswell Clarke illustrated elsewhere in this issue. The company has always been railway minded. From the outset in 1894 its docks were designed as a railway port with excellent transfer facilities to main-line connections. With the subsequent growth of the port the railway system has expanded; today it operates more than 200 miles of track, with 70 locomotives and 2,500 wagons. The port has always enjoyed a sound reputation for commercial enterprise, and this is almost an understatement when one recalls that in 60 years the freight handled has risen from one to 18 million tons per annum, so that on a par with Hull it now ranks after London and Liverpool as the third largest port in the kingdom. One suspects that the introduction of diesels has been delayed until now on account of the excellent stud of steam engines. These have given splendid service and continue to do so, even though some of them are over the half-century mark. These simple,

sturdy and remarkably powerful machines can take all the punishment in the world, and as one gentleman succinctly remarked, "Sometimes you can repair 'em with a piece o' string!" If other things were equal (which they are not!), a £30,000 diesel would have to do an awful lot of work to catch up with a 50-year-old steamer. As it is, the saving on single manning and fuel costs alone gives the diesel an overwhelming advantage, and only a romantic would pretend that cooking dinner on a shovel is a better business than with a nice little electric cooker—thoughtfully provided on most current designs.

Why Not Road Caravan Coaches?

ABOUT this time of the year the railways are able to report that all vacancies for the many camping coaches they provide in coastal and other locations are fully booked up, for the high season at any rate. The success of this form of holiday, despite the fact that the locations cannot always be convenient, nor the coach fittings more than spartan in character, gives cause to wonder whether the bus companies in similar areas are not missing a good thing. Several of them are now contracting their fleets as a result of service economies and there should be some old single-deckers which could be cheaply converted to very comfortable and mobile holiday headquarters. Quite a number of small parties have acquired veteran buses with this sort of objective in view. The company could collect the caravan party at the weekend, returning for the next party at the end of the week, thus giving a door-to-door service with absolutely no luggage worries. It might also be possible for the bus to be moved to one or more fresh sites during the week or fortnight of occupation. The big problem, of course, is where to find camping sites—a rash of buses around the coast could arouse antagonism in various quarters. Nevertheless it ought to be possible to ferret out a number of suitable parking places, whether on public caravan sites or individual locations. Provided the price is moderate, the prospect of a trouble-free journey to and from the sea, and a headquarters convenient to shops and entertainments, should prove a very strong selling-point.

The Eastbourne Accident

IN his report on the Eastbourne accident of August 25 last, Colonel W. P. Reed, inspecting officer of railways, severely criticised the driver, fireman and guard of the express from Glasgow which crashed into an electric train standing at platform 4; five people were killed and 41 injured. The driver, he says, "must accept full responsibility for the accident." He finds it difficult to accept the train crew's evidence about exceptionally heavy rain as the train approached the station and has no doubt that the speed was probably about 25 m.p.h. "I consider that the train crew were not truthful in their evidence in this matter." He goes on to say: "The speed was excessive and he (the driver) should have made a much stronger brake application to reduce it as he approached the signal, even if he was convinced that it was off." Colonel Reed states that he was given no assistance by the fireman in finding out what happened on the footplate; "if true his statements reflect no credit on his ability." As to the guard, his evidence "seems to have been framed so as to excuse himself for having failed to look out for the home signal and to take action to control the train. . . ." There was no firm evidence that the signal was off when the Glasgow train passed it, while there was abundant circumstantial evidence that it was properly at danger. Colonel Reed refutes the suggestion that detonators might have prevented the accident, but points out that the policy is to provide detonating machines as a part of all future modernisation schemes. He concludes his report by referring to the special investigation now being carried out by the B.T.C. into accidents due to drivers passing signals at danger, in which the trade unions have promised full co-operation.

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

A New Phase in Road- Rail Competition

PUBLICITY accorded the London Midland Region Condor door-to-door express container service between London and Glasgow, which commenced last week, has hit road transport where it hurts most. The impact could be one of shock only and the effects may wear off quickly; on the other hand the consequences could be lasting if the patient fails to recognise the signs and to take the remedies available. With a point-to-point running time of just under 10 hours, this London-Glasgow rail freight service (actually it operates between Hendon and Gushetfauld in south Glasgow) clearly scores heavily over the 18 to 36 hours needed for the trunk road haul, depending on the method of staging and the schedules adopted. Moreover the departure and arrival times fit in well with industrial requirements. What has been overlooked in the commotion which greeted the rail announcement is that this service is only a small part of the far wider London Midland scheme for more fast overnight freight trains, coupled with concentration of marshalling yards and depots for all classes of traffic, outlined at the beginning of the year. This put the writing on the wall with a vengeance. Of course it is necessary to get the Condor service and any which follow it in proper perspective: despite the attractive 4-ton unit load charge offered—it works out at about 80s. a ton—there are many things which are not suited to container transit. Many consignors are, moreover, wedded to the 17-ton lorry load, which is highly economic; on the other hand some cannot fill a container and must presumably find expensive dunnage to pack out the voids, still paying the full charge. Senders and consignees will normally have to find labour to load or unload.

The Squeeze

IF express railway container services do not quite spell the immediate ruin of long-distance operators on trunk routes between main centres there is enough in them to raise in an acute form the viability of road haulage and to suggest that it will have to look hard to its laurels. Personal attention, door-to-door service and flexibility of outlook we recognise as immense assets; now something more is needed. Better technical organisation, particularly the more efficient use of men and machines on the trunk haul, would be a major contribution. In the past hauliers have relied heavily upon lower rates, often out of all relation to costs. Now this weapon of competition is no longer open in the same measure, rock-bottom having been reached in many instances. Indeed, the industry presently finds itself on singularly insecure ground if there is to be a rates war with the railways. The trade recession may not have hit a resilient road industry quite as severely as it did the railways, but it has had the effect of accentuating the problem of surplus capacity which has bedevilled it at most times. On top of this there is the increasing temptation to disregard statutory regulations covering drivers' hours in order to make cut rates economic. Unfair competition of this character weakens the responsible haulier also. There is in fact widespread recognition that transport by road is being sold largely below cost of production and almost equally wide admission that in the ultimate interest of the user it ought not to be.

Railway Rates Under Fire

REACTIONS by hauliers have shown that they are not entirely unaware of this pincer movement against them, and their comments have been principally directed against some of the rates which the railways are currently charging in various parts of the country. On the score of service there is obviously not much that they can do about the new container services—except to use them. Railway rates, they feel, are a very different matter. One or two have stressed—and on the road record they could not fairly do otherwise—that hauliers do not cavil at honest competition, but they remain unconvinced that some of the rate reductions noted

MODERN TRANSPORT
MARCH 28, 1959

are economic and feel bitter that the railways are being financed by public money to enable them to do this sort of thing. The railways, it is felt, too readily argue that on dense routes marginal traffic is cheaply accommodated. The point may come where the tail begins to wag the dog and this extra traffic, attracted perhaps by rates below even the old exceptional limit, may tip the scale of profitability; beyond that nothing, even multiplied by 50, still equals nothing. In view of its ultimate obligation to break even and to repay modernisation loans and deficit financing, British Railways ought to be making even its paying routes more so. There is no positive assurance that rate reductions on the scale referred to achieve this objective; but traffic costing advice may well be that on this type of work low railway rates pay handsomely.

Concession Unused

THIS, however, is a negative approach to the present needs of the haulier which are, as we have said, that he should conduct a searching self-analysis. He is by instinct well equipped to face up to the situation. There are avenues, not all of them immediately fruitful, which would repay exploration. Motorways hold out hope of accelerated schedules and lower cost per ton if gross vehicle weight limitations are relaxed and larger and more powerful units authorised on the new roads. Vehicles of greater carrying capacity are, of course, being increasingly resorted to as it is. In the meantime there is clearly a case for coming to terms over the 30-m.p.h. speed limit for heavy goods vehicles. Some regard this as a dubious concession because the economic rewards are so illusory, but the blame for its tardy implementation cannot be laid wholly at the employers' door. Perhaps now that the livelihood of their members is threatened as never before, the trade unions can be spurred to co-operation. It has been said authoritatively that worthwhile operational savings show up only on hauls of 100 to 120 miles at one end of the scale and 200 to 300 miles at the other; on the broad front represented by the many hauls of 150 to 200 miles the trip time saved cannot be turned to account at destination. But is this really digging deep enough for a solution? Full utilisation of the period of a driver's turn of duty is a prerequisite of any rescheduling, especially if the unions should succeed in getting the statutory day reduced to 10 hours, in itself a not altogether unreasonable demand having regard to road conditions. This better utilisation could be achieved by more staging of vehicles, ideally articulated units, along a route so that each section, out and back, occupied a driver for the full 10 hours, and each set of drivers did a full turn of duty. Large operators of articulated vehicles, notably B.R.S., stand to come off best in any event. Whatever its value in other respects, rescheduling to the 22-m.p.h. average must show to advantage in the present context if it enables an operator to deliver next morning where previously it was afternoon or even the third day after collection.

Railway Road Services

ONE feature of the London Midland Region freight modernisation scheme perhaps repays a closer look because it may be thought to have some bearing upon rail competition for road traffic. The scheme envisages more of what, in railway parlance, is the trunk motoring of traffic from a railhead concentration point to destination, or perhaps its sorting at an intermediate point before final delivery. More heavy-duty vehicles and fewer short-distance mechanical horse or similar units will be required, it seems. It is quite a long time, 25 years in fact, since the licensing of railway collection and delivery services was tested on a broad basis and the 1934 Sanderson appeal appears still to govern the general position. Then it was said that the railway had a statutory obligation under section 49 of the Railways Act, 1921, to collect or deliver traffic, where it held itself out to do so, and if it could do so more efficiently with its own vehicles it should have the necessary licences, notwithstanding that the traffic might be abstracted from road carriers. But while Sanderson is topical in that it arose out of an L.N.E.R. cartage concentration scheme, it was framed in a rather parochial setting, the objectors being only local carriers who saw themselves ousted by a rail service. Moreover, Sanderson was not related to an integrated road-rail service of the character we know today, in which the road vehicle plays a major role. This is some way removed from the original conception of collection and delivery upheld in that appeal, wherein it figured in an ancillary role. But in any event, and in the last resort, the British Transport Commission would still benefit if traffic denied the railways were carried by British Road Services.

Forthcoming Events

- March 31.—Institution of Railway Signal Engineers (Bristol). Paper by Mr. J. A. Heald, "Specification and Inspection of Signalling Materials." At Temple Meads Station, Bristol. 6 p.m.
- April 1.—Institute of Petroleum. Paper by Mr. J. S. Elliott, "Extreme Pressure Lubricants and Additives." At 41 New Cavendish Street, W.1. 5.30 p.m.
- Electric Railway Society. Paper by Mr. G. W. Lauder, "Railway Electrification in India." At 158 Drummond Street, N.W.1. 7.15 p.m.
- April 3.—Institution of Highway Engineers. Paper by Mr. W. Jeffery, "Some of the Technical and Administrative Problems Arising on Motorways in Great Britain." At Institution of Structural Engineers, 11 Upper Belgrave Street, S.W.1. 5.30 p.m.
- Railway Correspondence and Travel Society (West Midlands). Paper by Mr. F. Rich, "The Rugby Testing Plant." At Engineering Centre, Birmingham. 7.15 p.m.
- Railway Club. Paper by Mr. D. S. M. Barrie, "The Railways of Wales, 1809-1959." At Royal Scottish Corporation, Fetter Lane, E.C.4. 7 p.m.
- April 3-7.—Railway Students Association. Golden Jubilee celebrations in London.
- April 4.—Railway and Canal Historical Society (Midlands). Visit to Stratford and Moreton Railway.
- Railway Correspondence and Travel Society. South Lancashire Freight Lines Rail Tour.
- Norbury Transport and Model Railway Club. Hellingly Tramway tour.

URBAN MOTORWAYS

Review by Lieut.-Colonel G. W. Kirkland*

OVER-RAIL RADIAL ROADS ADVOCATED

HOWEVER much agreement there might be with the views expressed recently by Lieut.-Colonel G. W. Kirkland to a joint meeting of structural and highway engineers on the inevitability of the country having to undertake a massive programme of urban motorway building, the average Briton being what he is, the colonel is likely to find little sympathy with his contention that "we must be rid of some of the squirrel-like hoarding of what many regard as 'ancient monuments' or 'heritage' but which are merely obstacles in the way of progress." However that may be, we find ourselves wholeheartedly in support of his view, as has frequently been expressed in our columns, that there is much more urgent need for rapid road transport routes through and around large urban areas than there is of the complete reconstruction of our arterial highways system now proceeding.

Public opinion, roused by the zealous campaigning of the various interested bodies and strengthened by the daily crawl to and from office, shop and factory or the frustration of the weekend trip to Brighton, Blackpool and Southend, has been

The urban motorway could be conventionally at ground level; elevated at such heights as dictated by obstacles to be cleared or geographical situation; of double- or multiple-deck construction; depressed below surrounding ground level between retaining walls or in tunnel. In all these fields the services of the structural engineer would be necessary to a great extent as well as the obvious contribution of the highway engineer. The speaker thought that the traffic engineering skills involved were well within the scope of practising British structural and highway engineers—in the combination of whose functions he saw the traffic engineer. Some doubt of native ability in this sphere was perhaps implied by the Minister of Transport when he announced recently that in order to carry out the works we need he was prepared to import the necessary design and engineering skill from abroad.

The Cost

Although with a ground-level or depressed urban motorway load classification would have little real significance, it would be of some importance in elevated roads and Colonel Kirkland thought that if the concept of the urban motorway was to give rapid through routes for normal traffic, the prohibition of abnormal loading would be acceptable. This

TYPICAL AMERICAN MOTORWAY STRUCTURE COSTS IN RURAL AND URBAN AREAS

Two-mile section of Mt. Diablo Freeway from Alvarado Ave. to Monument, being four lanes of P.C.C. pavement in rural area. Total construction cost (excluding right of way) £1,057,801, total cost of structures £226,950

STRUCTURE DETAIL

Name	Type	No. spans	Maximum length span Feet	Roadway width Feet	Total length Feet	Total structure Cost £
Walden Road overcrossing	R.C. box girder	6	100	64+6 sidewalk	460	87,518
Contra Costa Canal Bridge	R.C. T beam	4	37	Two @ 38	133	21,986
Geary Road overcrossing	R.C. T beam	4	57	52+5 sidewalk	179	23,050
Oak Park Boulevard overcrossing	R.C. T beam	5	57	28+5 sidewalk	339	42,553
Hookston overcrossing	R.C. box girder	4	98	28	336	41,844
						226,950

TABLE 1

2.1-mile section of Colorado Freeway from Wlota Street to Holly Street, being four lanes of P.C.C. pavement in urban area. Total construction cost (excluding right of way) £2,226,241, total cost of structures £1,248,582

STRUCTURE DETAIL

Name	Type	No. spans	Maximum length span Feet	Roadway width Feet	Total length Feet	Total structure Cost £
Monte Bonita Drive undercrossing	R.C. slab	3	49	Two @ 28	127	27,660
Route 161-165 separation	R.C. box girder	3	101	Two @ 28	221	61,348
Eagle Vista Drive overcrossing	R.C. box girder	2	96	28+12 sidewalks	137	27,660
Melrose Avenue off ramp undercrossing	R.C. slab	40	40	—	385	50,000
Melrose Avenue on ramp undercrossing	R.C. slab	40	40	—	236	29,078
Club Road overcrossing	R.C. box girder	2	82	28+10 sidewalks	154	30,851
Arroyo Seco Bridge and separation	R.C. arch bridge	3 arches	302	38	1,364	857,801
Colorado Street Bridge	R.C. arch bridge	80 ft	80	—	—	50,709
Frontage Road separation	R.C. slab	—	22	—	62	35,816
Colorado Street on ramp overcrossing	R.C. box girder	2	78	25	190	33,333
Orange Grove Avenue overcrossing	R.C. box girder	2	51	64+24 sidewalks	110	44,826
						1,248,582

TABLE 2

partly appeased and perhaps somewhat abashed by the pace and vigour with which the Minister of Transport has pushed forward the motorway programme. But little public concern appears yet to be felt about the probably catastrophic worsening of the situation inevitable when the additional traffic generated by the new motorways joins the funneling streams into already choked urban roads.

Reluctance Evident

Nor does there seem to be a general concern at the apparently warped sense of priorities that schedules the completion of 70 miles of motorway in about 18 months compared with 2½ years for that of the Chiswick flyover—a most urgently required improvement designed to unshackle one of Greater London's daily traffic tangles and weekend nightmares. Many similar cases of apparent tardiness or reluctance in pressing forward vital easement of intolerable conditions in our larger towns and cities come to mind and a system that made possible the blocking by London County Council for several years of the proposal for a flyover at Hammersmith—which at the least greatly reduces the value of the Cromwell Road extension until the now-approved flyover is built, seems slightly lunatic.

Although in this case the Ministry of Transport appeared more progressive than the local authority, it must be admitted that as far as the majority of urban road improvements are concerned the reverse is the case, because of the Minister's overall responsibility for ensuring that the Treasury allocations for road works are not overspent and that the country's labour and material constructional resources are not overtaxed. Bearing in mind the often-voiced opinion of spokesmen of the road-building industry that its capacity is by no means fully occupied at present, and the estimates of vast savings to be expected from the speeding up of road traffic in and between our main industrial and commercial centres, perhaps the time is now ripe for overhauling the present system of authorising and financing new road projects, urban as well as interurban, even if it means some curtailment of the traditional rules regarding property to achieve speed of action. There is no doubt that London would benefit from a single road authority.

Aesthetic Values

To return to Colonel Kirkland's paper, of the contention by some people that the urban motorway is ugly and should have no place in Britain, he said that the essential opening up of some of our thoroughfares and removal of traffic clutter and smoke haze from streets would allow the gems (and the atrocities) in our cities to be seen in a new light. Moreover, many of the structures required in the urban motorway could become monuments of grace to our generation. Siting was important and it was believed to be a sound plan to site the urban motorway alongside natural or artificial divisions such as parks or commons. The basic pattern generally demanded a ring road at which rural motorways terminated, radial routes and inner rings; the number of radial and inner ring roads must be adequate to feed the industrial areas of the city and any plan which did not make provision for future needs was almost as useless as no plan at all.

* In a paper, *Urban Motorways*, presented to a joint meeting of the Institution of Structural Engineers and Institution of Highway Engineers in January by Lieut.-Colonel G. W. Kirkland, M.B.E., M.I.Struct.E., M.I.C.E., vice-president of the Institution of Structural Engineers.

may be so provided the motorways themselves do not generate a great new volume of abnormal loads which would, because of prohibitions on elevated sections, be forced on to the older roads in towns, where they would defeat in part one of the main objects of the urban motorway—a speeding up of public transport services on existing roads to make them more economical to operate and more attractive to use. On the other hand, the cost of these urban motorways is likely to be extremely high, with elevated sections being the most costly (except perhaps for tunnelling) due to the extensive structural work involved, and it might be necessary to limit loading on the grounds of cost.

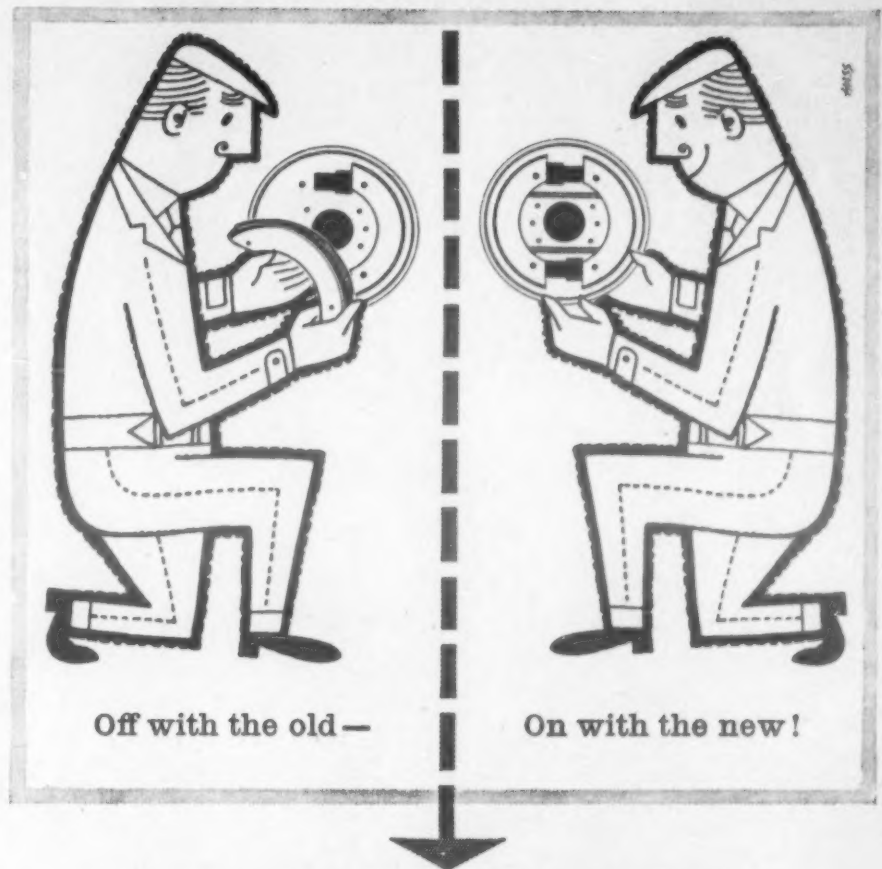
The question of cost was a difficult one, said Colonel Kirkland, as it was not possible to take a distance between two points and apply a mileage-cost factor. So much depended on the proportion of depressed to elevated roadway, span proportions of the elevated sections and number of intersections to length of motorway provided. Moreover, the property acquisition and relocation costs could vary considerably over comparatively short distances. Some cost examples were given in sterling equivalents of various American projects illustrating some typical construction, land acquisition and intersection costs and the differences between sections of the same project.

The total costs of a completed 68 miles of a 185-mile programme for New York City arterial roads were £113 million for construction and engineering and £45.5 million for land and relocation. Construction and engineering costs on the Long Island Expressway varied from £2.06 million a mile for a 3.2-mile section at Queens to £1.59 million a mile for a 2.1-mile section between Springfield Boulevard and the Nassau County line, while land acquisition and relocation costs on the same two sections showed the remarkable variation of £0.41 million and £3.2 million a mile. The figures are for twin three-lane carriageways and do not include turnouts and acceleration and deceleration lanes. Estimates of the total cost of the completed 185 miles scheduled in the programme are £706 million or £3.82 million a mile. Costs of various types of interchange system were also given in the paper, while typical structure and construction costs quoted for rural and urban motorway sections are reproduced in the accompanying tables.

The Savings

The question now, said Colonel Kirkland, is not whether we can afford the high cost of these urban motorways but whether we can afford not to have them; the answer in his opinion was a definite no, supported by figures quoted from United States experience. Savings were numerous and those in fuel and oil, maintenance, accident reduction and journey time for commercial vehicles were said to amount to one penny per vehicle-mile. Applying these economies to a central heavily used urban motorway, it had been claimed that they represented from 8 to 17 per cent of the capital construction costs involved. In Los Angeles it was claimed that on a \$42 million development in 17 miles of urban motorway, the annual saving calculated on a similar basis amounted to 12 per cent. Colonel Kirkland took a sufficiently broad view to point out that urban motorways would not solve one traffic problem; parking, he said, the evil which robbed the community of the use of one third of its streets on an average, was a problem on its own that had to be solved concurrently with the road plan.

(Continued on page 14)



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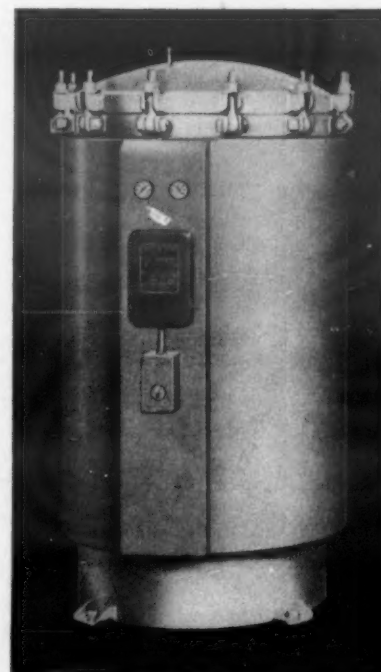
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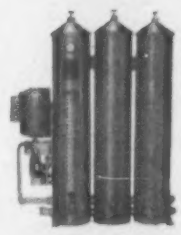


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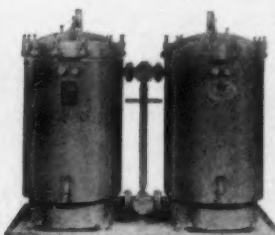
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LORRY—BUS—COACH

Plans for Motorway Service

THREE journeys in each direction daily have been authorised by the West Midlands area Traffic Commissioners to the Birmingham and Midland Motor Omnibus Co., Limited, along the London-Birmingham motorway when it opens in the autumn. The running time on this express service will be 3 hr. 25 min.; at present it is 5 hr. 18 min. between Birmingham (Digbeth) and London (Victoria). At first existing coaches will be operated; later a fleet of 45-ft. long coaches, seating 60 passengers, is intended.

Port Elizabeth Bus Operations

THE Port Elizabeth Electric Tramway Co., Limited, in South Africa, has recently bought Forlee's Bus Service and S. Albans Bus Service (Pty.), Limited. The company has now a monopoly of private bus services in the Walmer and Port Elizabeth municipal areas.

About-Face on Fares

LAST Friday the North Western area Traffic Commissioners at Chester granted an application by Crossville Motor Services, Limited, for fare or stage revisions on 245 routes in North Wales, Cheshire and Lancashire. Ninety-five per cent of the changes were downward. There were reductions of up to 2d. on single fares and 6d. on return fares. Mr. G. H. P. Beames, who made the application, said: "We are trying to woo back the public." The company had found that after fare increases there had been passenger resistance.

Ancillary Users in South Africa

PROCEEDINGS before the South African Road Transportation Board indicate that opposition by the South African Railways to applications by private users to deliver goods in their own vehicles will become even stiffer, according to the transportation committee of the Cape Chamber of Industries. The Viljoen Commission on policy relating to the protection of industries pointed out in its report—which will be discussed in Parliament this session—that the Union is the only major country in the world where restrictions are imposed on ancillary users as to the movement of their own goods.

C-Licensees Victims of B.R. Deficits

SPEAKING at Kenilworth, Mr. C. E. Jordan, chairman of the West Midlands division of the Traders' Road Transport Association, said that the greatest menace to the freedom of the C-license holder was the constant and increasing deficit incurred by the British Transport Commission. Sir Brian Robertson, chairman of the B.T.C., Mr. Jordan noted, had said that apart from a recession in trade, particularly in coal, iron and steel, which had affected railway forwardings in those trades, the main loss had been incurred by the diversion of general merchandise to C-licensed vehicles. It was known that the efforts of the B.T.C. were being concentrated in regaining this traffic. "I suppose that if this Commission could offer a trader a perfectly reliable service of delivery, at rates which would on balance be less than the cost of operating

a commercial fleet, then there could be a change in the form of transport used. But the onus is clearly on the B.T.C. to prove its case," said Mr. Jordan.

Four-Weekly Bus Tickets

FROM Easter Sunday all transfer and return fares on Southampton Corporation Transport's bus system will be abolished. Their removal is calculated to increase revenue by some £25,000 a year. Instead, four-weekly multiple-journey tickets are to be introduced. Granting the application to make these changes, the chairman of the South Eastern area Traffic Commissioners, Mr. H. J.



An Albion bus of Skye Transport, formerly owned by the Scottish Co-operative Wholesale Society, and recently taken over by David MacBrayne, Limited, seen at Kyleakin; right, a Daimler CVG6 61-seater (Alexander all-metal body), one of 25 and used on a new Glasgow Corporation bus route replacing trams between Millerston and Rouken Glen

Thom, said the commissioners had previously expressed their strong approval of the corporation's policy of making itself self-supporting. "We thoroughly approve of the proposals," he added. "We regard this corporation undertaking as a very efficient one, and we continue to hold that view." The multiple-journey tickets would be issued to people who apply in writing and in respect of journeys the single fare of which was over 8d. They would be usable only at specified times. The rates would be £1 4s. for a five-day ticket for the four-weekly period, and £1 7s. for a six-day ticket.

B.T.C. Prey of Socialists

TAKEN literally, the Socialist threat of renationalisation would put a stop to the activities of several thousand road haulage vehicles, each of which carries in a month more than the average railway wagon carries in a year, said Mr. R. Morton Mitchell, chief executive officer of the R.H.A., in Bristol last week. It was certain, he thought, that this highly efficient standard of operation could not be reached, let alone surpassed, by a nationalised monopoly. The Socialists would not be satisfied with merely taking over

long-distance road haulage. That was only half the story as, in order to eliminate all competition, the Socialists would have to turn their attention to the trader and manufacturer who ran their own vehicles. "The British Transport Commission has already made plain that the unrestricted C-license is its chief handicap, and when it comes to stopping somebody from doing something the Socialists are with it all the way."

Commissioner and Miniature Buses

REPORTING to Hampshire Roads and Bridges Committee on a meeting between the South Eastern area Traffic Commissioners and representatives of the West Sussex County Council, Colonel E. Collins, a member of the committee who was present at the meeting, said the county council was chiefly worried about the reception small bus operators might have if they applied to operate services in substitution for those run by large companies. The Commissioners said they would welcome with open arms applications from the

programme would be completed by 1963. Until 1958 only about £650,000 had been spent on it, but in future it would average about £1.5 million a year.

Mr. E. R. L. Fitzpayne, general manager of the undertaking, said that in preparing estimates of anticipated revenue, allowance had been made for a 5 per cent loss on each fare except the 9d. fare for nine or ten stages, on which a 2½ per cent loss had been allowed. Dealing with the conversion, Mr. Fitzpayne said that the total estimated cost was £8,290,000, of which the highest single instalment, £1,871,000, would be met in 1959. The total cost of roadway reinstatement, £1 million, was repayable at the rate of £100,000 over 10 years.

Cost of Shelter Upkeep

MAINTENANCE of municipal bus and tram shelters in Sheffield is now estimated at £10,000 a year, whereas as recently as 1955-56 it was under £1,000, said Alderman I. Lewis, Sheffield Finance Committee chairman, when he presented the budget to the city council recently. The increase was a reflection on how capital expenditure in one year created revenue expenditure in succeeding years.

New C.o.F. Regulations

SINCE the new consolidated P.S.V. (Conditions of Fitness) Regulations came into force last April experience has shown that a few minor amendments are necessary, and the Minister of Transport has now made amending Regulations. The changes are:

1. To modify the turning circle requirements so that new vehicles constructed to comply with the swept circle requirements for vehicles registered on and after April 1 this year, which are quite different from the swept circle requirements for existing vehicles, can be put into service before that date.
2. To permit the fitting of a fuel tank under a passage leading to the third (emergency) exit where a third exit is required on account of high-seating capacity.
3. To exclude from the requirements as to width and height of gangway any space between two facing seats placed lengthwise at the end of a gangway.
4. To modify the requirements relating to the distance between one transverse seat and the seat in front so that new vehicles constructed to comply with the conditions for vehicles registered on or after April 1, 1959, can be put into service before that date.

The Regulations are entitled the Public Service Vehicles (Conditions of Fitness) (Amendment) Regulations, 1959 (H.M.S.O., price 3d.).

Bus and Coach Developments

C. H. Bird, North Hykeham, seeks the Lincoln-Harby service of W. Hutson.

Kyles of Bute Bus Co., Limited, Tighnabruich, proposes a monthly express service thence to Glasgow.

Coaches (Bromsgrove), Limited, Bromsgrove, applies for licences held by Harris Coaches (F. L. Harris).

North Western Road Car Co., Limited, applies for the Bradwell-Hope Station service of Sheffield United Tours, Limited.

C. A. Whiteley, Maltby, Rotherham, applies for modifications to excursions and tours from Maltby which, if granted, would lead to surrender of the licence held by G. H. Vasey.

Red and White Services, Limited, proposes a new service between Ebbw Vale (Palace) and Garn-Lydan Estate. Application by Glyn Davies for an Ebbw Vale-Garn-Lydan service was recorded in MODERN TRANSPORT of January 24.

P. F. and J. Browne, London, S.W.16 (Browne's Transport (Redhill)), have been granted the Redhill-Outwood-Horley service sought. (MODERN TRANSPORT, December 27, 1958.)

Vehicle capacity is limited to 11 seats.

Lincolnshire Road Car Co., Limited, applies for a Boston-Horsington service. This follows an agreement with Hudson's Bus Company which is modifying its Lincoln-Horncastle service.

Bus routes in High Wycombe are to undergo considerable revision on April 6 and several Thames Valley routes which terminate at the railway station will be transferred to the London Transport garage. Certain London Transport services will be diverted and stops on others will be changed.

Austin and the P.L.A. Police

IN 1802 a hundred men, armed with musket and cutlass, guarded London's first commercial docks. Today the tidal reaches of the Thames, 69 miles from the Estuary to Teddington, are controlled by the Port of London Authority.

The five great dock areas—in Wapping and Shadwell, Rotherhithe and Bermondsey, the Isle of Dogs, North Woolwich and Tilbury—are protected by the P.L.A. Police. At the dock gates, on the quays, in the roads, round the warehouses, they are on guard.

Riches of the world The P.L.A. are probably the largest warehouse-keepers anywhere. Their tall gaunt buildings, clustered about the docks, hold the world's wealth. Wine and wool, tea and tobacco, rubber, meat, drugs and timber, oil, ivory and ostrich feathers. Dockland is rich in temptation, its protection a man-sized job.

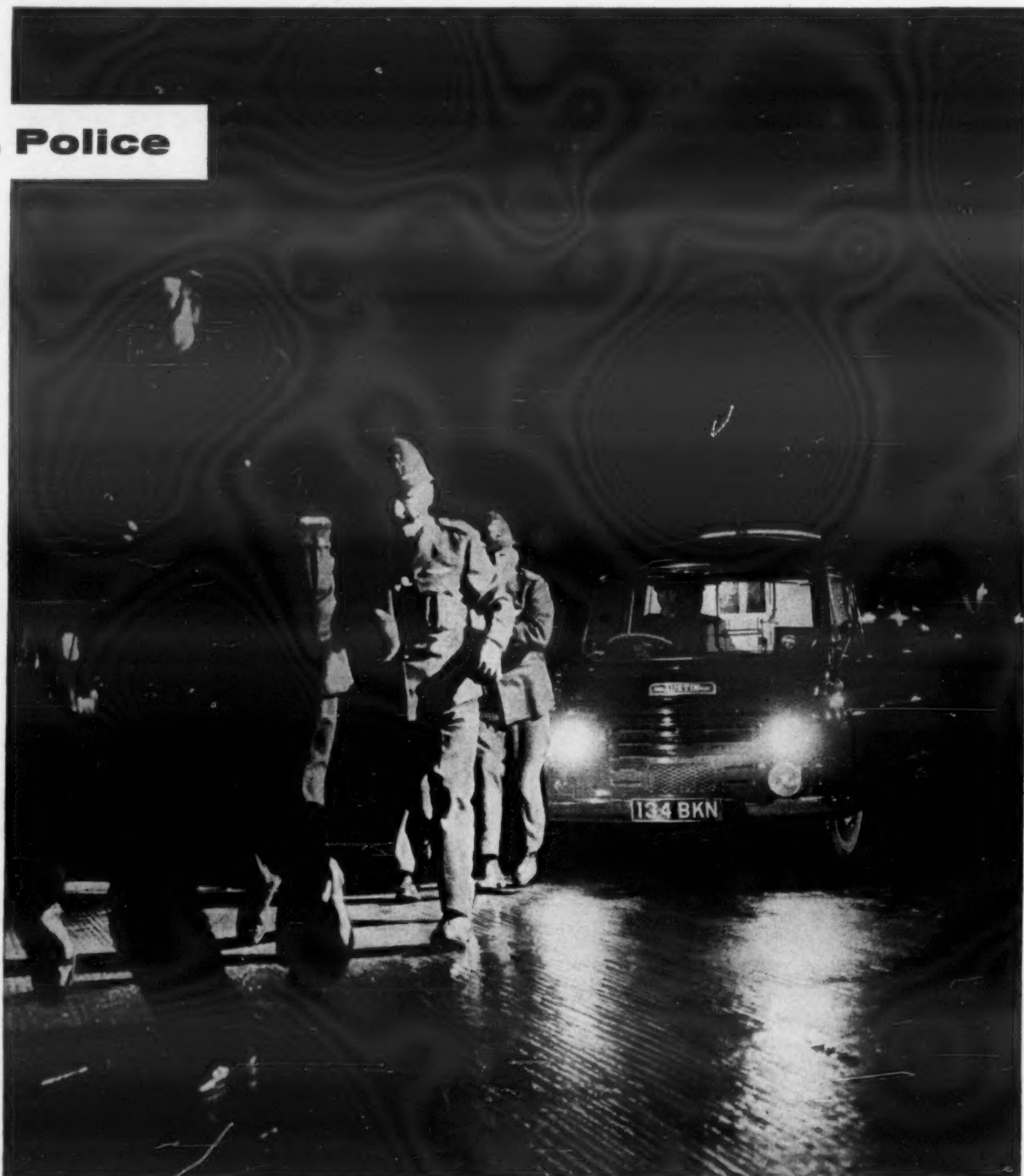
The 600 men who make up the P.L.A. Police are highly trained, highly skilled, ready, when trouble flares up to assemble at a moment's notice. Night or day, the P.L.A. Police are constantly on the alert. The mobile part of the force is soon at a danger spot.

At a moment's notice A mobile force needs dependable transport. The Port of London Authority have chosen Austins. Their police vans are likely to be needed anywhere, at any time, to carry any and every kind of load. Speed, manoeuvrability and large capacity are essential. The P.L.A. Police find what they need in Omnivans.

And more besides Load space in the Austin Omnivan is exceptional—200 cubic feet for a good 15 cwt. Low floor and wide rear door make for easy loading. All-steel mono-construction gives great strength—with lightness. Power from 1500 c.c. O.H.V. engine. Luxury comfort in cab. 12 months' warranty and the backing of B.M.C. Service—Britain's best service and parts organisation.

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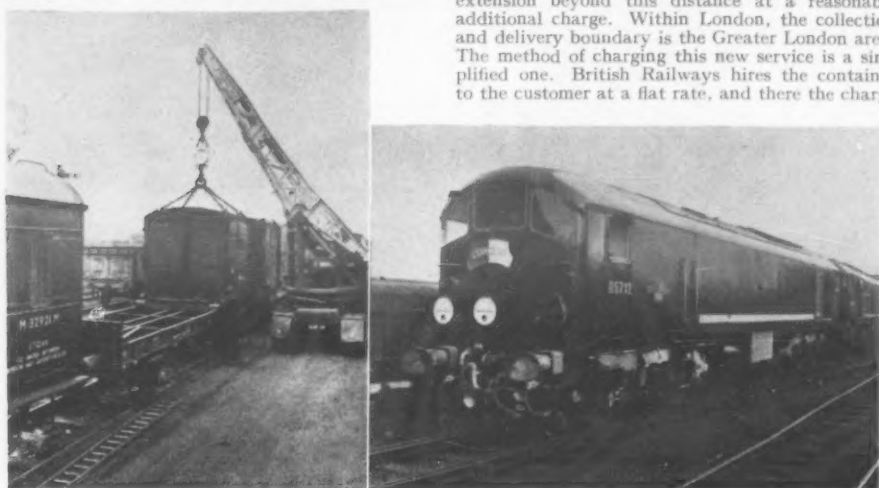
Start of London-Glasgow Express Service

WHEN the Condor express container train made its inaugural departure from Glasgow for London on March 16, it was flagged out by Mr. W. I. French, D.S.O., O.B.E., T.T., C.A., president of the Glasgow Chamber of Commerce, in the presence of Mr. S. E. Raymond, chief commercial manager, Mr. R. W. Jackson, district goods manager, and other railway officials who had been responsible for the development of the service. Hauled by two powerful diesel-electric locomotives, British Railways' finest and fastest freight express, as it has been termed, pulled out of Gushetfauld

to reach Hendon at 5.40 a.m. when the containers are unloaded on to road vehicles and delivered to the customer's door in London the same morning. In the opposite direction the train departs from Hendon at 7.23 p.m. and reaches Gushetfauld at 5.15 a.m. During the first week of operation the trains arrived on or before time at both destinations.

Collection and Delivery

The area of collection and delivery for the Condor service is within a 10-mile radius of Glasgow. Special arrangements may be made for limited extension beyond this distance at a reasonable additional charge. Within London, the collection and delivery boundary is the Greater London area. The method of charging this new service is a simplified one. British Railways hires the container to the customer at a flat rate, and there the charge



The special wagons on the Condor service carry one 300 cu. ft. and one 700 cu. ft. container apiece, crane loaded, and the trains are hauled by two Metropolitan-Vickers-Crossley 1,200-h.p. Co-Bo diesel-electric locomotives

freight yard, on the south side of Glasgow, promptly at 7.50 p.m., at the head of a 27-vehicle train loaded with 54 containers. This is a joint development of the London Midland Region and the Scottish Region.

This overnight container train, which runs in both directions, is capable of speeds up to 75 m.p.h. and will average over 40 m.p.h. for the 400-mile journey. There will be only one stop at Carlisle for wagon examination. It is scheduled

ends. Two types of containers are available with 300 cu. ft. and 700 cu. ft. capacity, for which the charges are £16 and £18 respectively, irrespective of the type of freight carried. The maximum load for each container is 4 tons. The charge covers collection and delivery but not labour for loading or unloading; normally the sender and consignee will do this. A container may be left at user's premises for loading, the railway cartage office being telephoned when it is ready for collection.

Road Transport Clearing Houses

DENATIONALISATION OPTIMISM AT LUNCHEON

IF the Conservatives were returned at the next general election he believed that finance would become available to complete the denationalisation of British Road Services, said Mr. W. R. Rees Davies, M.P., president of the National Conference of Road Transport Clearing Houses, at its annual luncheon at the May Fair Hotel on March 19. Today there was not a man in the City who would be prepared to put up the millions necessary for that end. But after a return of the Conservative party he believed they would be assured that road transport would be free of political interference, said Mr. Rees Davies. Complete denationalisation is still one of the planks on which conference policy is built.

Labour, Mr. Rees Davies went on, must be attacked on the renationalisation issue and before the country. They had still not heard what the Socialist plans were. Complete denationalisation, he admitted, could be achieved only if they could prove, firstly, to industry that totally free enterprise haulage would be more efficient than the present set-up and, secondly, that finance would be available to take over the residue of B.R.S. in large operating units; here he made the

observations referred to above about City interests.

The place of the large unit in road transport could not be denied, but even that would not be enough unless in private enterprise such units co-operated together in much greater measure. Mr. Rees Davies (whose disarming sincerity sometimes conceals his avant-garde thinking) suggested as a model for British hauliers the Allied Van Lines in America, a long-distance removing organisation, whose trailers are hauled by numerous associated hauliers with their own tractor equipment. They paid a commission to Allied Van Lines.

In this country such an organisation could be operated under a blanket name, with the operator's name appearing below it. This might be an especially good idea for Continental traffic; the company could act as an umbrella to cover the considerable documentation work necessary. The president was responding to the toast "The Conference," proposed by Lord Teynham, who had said that if the railways failed to make the grade this time he feared there might be the temptation to restrict haulage further. In any event hauliers would have to face increasing rail competition. He was sure that it could match this with increased efficiency.

N.U.R. AND CONSULTATION

B.T.C. Chairman and Withdrawal

WHATEVER differences there might be between both sides, neither should do anything to undermine public confidence, nor to imperil the future of the industry, Sir Brian Robertson, chairman of the British Transport Commission, has told Mr. S. F. Greene, general secretary of the National Union of Railwaymen, in a letter deploring the N.U.R. decision to withdraw from the railway consultative machinery. Sir Brian Robertson's letter, published on March 20, was sent in reply to Mr. Greene's notification that the N.U.R. was to withdraw from "the British Railways Productivity Council and all stages of the consultative procedure" from June 30 because of dissatisfaction with the Commission's attitude to compulsory trade union membership. The full text of Sir Brian Robertson's letter was:

Dear Mr. Greene,

Compulsory Trade Union Membership

I feel bound to say that the Commission have been astonished to learn the decision of your Executive as contained in your letter of March 17 and they deplore it.

At our meeting in November last I stated quite frankly our position in the matter of Compulsory Trade Union Membership. Your Executive know that on many occasions I have gone out of my way publicly to acknowledge the help I have received from the Unions, and the importance which I attach to their co-operation. The Commission have from the outset safeguarded in full the special position of the three Railway Unions so far as their negotiating rights are concerned.

Moreover, the consultative procedure between management and staff forms part of the Memorandum of Agreement dated May 28, 1956, between the Commission and your Union, the Associated Society of Locomotive Engineers and Firemen and the Transport Salaried Staffs' Association, which Agreement can only be terminated, in accordance with the provisions of paragraph 21, by the Commission or by the three Unions jointly giving 12 months previous notice in writing to this effect. According to the advice given to me, the provisions relating to consultation must remain in force until the Agreement is terminated by the procedure prescribed above.

British Railways are going through a major crisis in their history. While they can and should surmount this crisis successfully, neither the Management nor the representatives of the staff should close their eyes to the fact of the crisis. The basic objective of both is the future prosperity of the industry. Whatever differences they may have, neither side should do anything to undermine public confidence, nor to imperil the future of the industry. Co-operation and fruitful consultation cannot be enforced by agreement but I hope that these wider considerations will influence your Executive to reconsider their decision.—Yours sincerely,

(signed) Brian H. Robertson

S. F. Greene, Esq.,
General Secretary,
National Union of Railwaymen.

A GOLDEN JUBILEE

London Celebrations by R.S.A.

AS already foreshadowed in our columns, the Railway Students Association has arranged a very full programme in the London area from April 3 to 7 to mark the Golden Jubilee of the association and it may be recalled that guests from a number of European railway undertakings have been invited to take part.

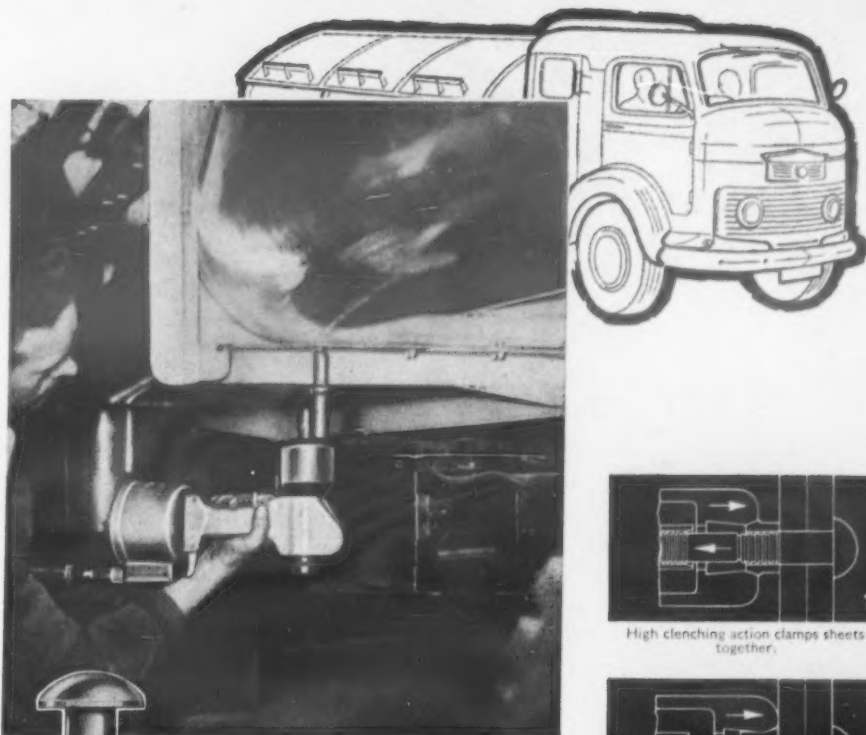
On Friday, April 3, there is to be a visit to the signal box and other new features at St. Pancras in the morning and in the afternoon an inspection of the L.M.R. carriage cleaning and scouring depot at Stonebridge Park. The director of the London School of Economics, Sir Sydney Caine, is holding a reception on the Friday evening and this will be followed by a dinner at the school. The next morning Major-General L. Wansbrough-Jones, secretary-general, British Transport Commission, presents his paper "Modernisation of Railways in Perspective" and this will be followed by appropriate films.

Jubilee Dinner

Luncheon on the Saturday is at the Great Eastern Hotel, Liverpool Street, and the afternoon will be taken up by inspections of the new Temple Mills marshalling yard and the new carriage shed for electric stock at Stewarts Lane together with the locomotive depot now in course of conversion to handle diesel-electric units. The journey from Temple Mills to Stewarts Lane will be in a diesel railcar set via the North London line. On Sunday there will be luncheon at London Airport and an afternoon visit to Windsor.

The morning of Monday, April 6, will see the party at Upminster to inspect the new London Transport signalbox and car depot. After luncheon there will be a visit to the Eastern Region training school at Ilford and in the evening there is a reception by the president of the R.S.A., Mr. A. B. B. Valentine, and the fiftieth anniversary dinner at the Chatham Rooms, Victoria Station. There is a choice of Southern Region visits on the morning of April 7. One takes in Cannon Street Station and the new signalbox at Chislehurst Junction, another the Selhurst control room and signalboxes at Gloucester Road Junction and Victoria, and the third Raynes Park control room and Wimbledon and Waterloo boxes.

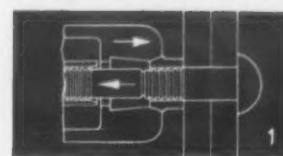
REVOLUTION IN THE INDUSTRY



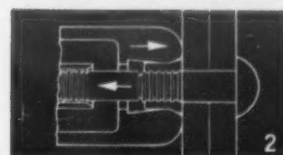
HUCKBOLTS in use on aluminium alloy Refuse Collector at E. W. Campion & Son Ltd., Body Builders of Leicester. This is one of the many vehicles on which they are now using HUCKBOLTS.



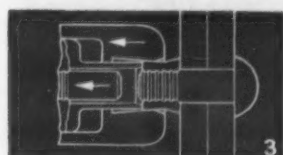
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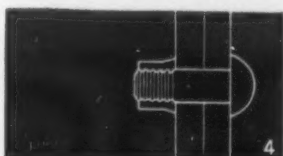
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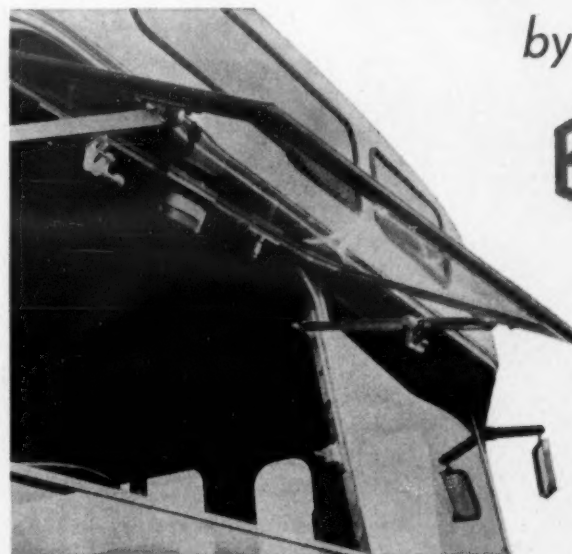
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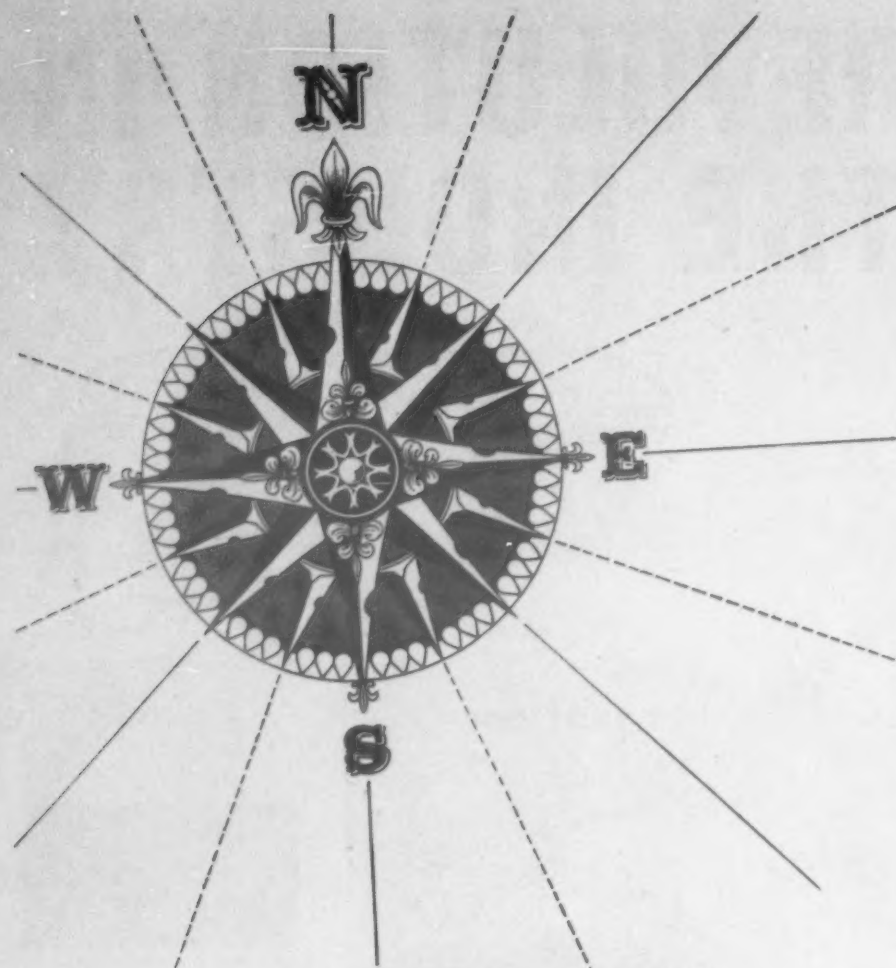
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Stable Costs the Key to Success in Expanding Markets

SIR GEORGE NELSON REVIEWS THE ACTIVITIES OF A WORLD-WIDE ORGANISATION

THE annual general meetings of The English Electric Company and its major subsidiaries in the United Kingdom were held on March 19 in London.

Sir George H. Nelson, Bart. (the chairman), in the course of his addresses said:

Since the last meeting, Mr. Nelson, your managing director, has been elected deputy chairman of each of our principal subsidiaries in this country. I have the greatest pleasure in welcoming him back from his tour of India, Pakistan and Ceylon from which he returned only two days ago. He is much impressed with the possibilities there and feels strongly that we should collaborate as closely as possible with the development of these countries. Mr. Nelson had the honour of being received by the Indian Prime Minister, Pandit Nehru.

Mr. Nelson also visited the Middle East as Industrial Leader and Vice Chairman of the Board of Trade Advisory Council on Middle East Trade and was most warmly received by rulers and leaders in many countries and is impressed with the possibilities of trade development in those areas.

The Export Position

I have referred in previous years to the difficulties which exist due to intense competition from the exporting nations of the world. We in the English Electric Company have endeavoured to play our part by expanding our interests and by diversifying our products, and we have become a world-wide organisation with our own manufacturing resources in the overseas field and with our own companies or agencies in most countries of the free world.

Need For Increased Efficiency

Our future success depends largely upon the extent to which we can stabilise and if possible reduce our costs. There are many important overseas manufacturers and suppliers of capital equipment of the types which we manufacture who are very active in world markets, and their number is growing as one country after another establishes an electrical engineering industry. At the same time, during the past few years, the severe fall in world commodity prices, while it has brought a welcome improvement for the time being in the terms of trade and, therefore, the balance of payments of the United Kingdom has reduced the ability of many of our customers who have low exchange resources and inadequate finance for development to buy capital equipment here. The result has been that competition has become even more severe.

These conditions challenge us to decrease costs without losing our reputation for high quality and provide a constant spur for everybody in the organisation to increase efficiency in design and manufacture. I feel it only right, however, to warn you that competition for its own sake or pushed to extremes can cease to be beneficial to this country and in fact can become positively detrimental.

Commenting on the prospects for overseas trade, Sir George said: I see no reason to be pessimistic about either the immediate future or more particularly in the long run, provided that we encourage the provision of appropriate finance. Over the years there is the possibility of great expansion in world trade and in capital development, and if we maintain our competitive power our company will be able to secure

its full share of the continually growing volume of work which will be on offer.

In reviewing the Group's activities Sir George said:

Traction

In the traction field we have always tried to anticipate the requirements of our own railways and of those overseas and over the years have carried out extensive research and development at our own cost. The development of the Deltic diesel electric locomotive has been an outstanding example which resulted in the receipt of an order from British Railways for 22 of these locomotives to operate intensive schedules on the East Coast route to Scotland. Other examples have been the development of a new type of bogey for electric trains, which has greatly reduced the need for lubrication and replacement or adjustment, and the development in the earlier days of our diesel electric shunting locomotive.

Some years ago in conjunction with the Southern Railway we built three electric locomotives each of 1,470 horsepower weighing 101 tons. It is an indication of the progress in our development that again in association with British Railways we are now producing 2,500 horsepower locomotives weighing only 80 tons. I will make another reference to this important business when I speak later about the Vulcan Foundry Group.

D. Napier and Son

The results of the Napier Company last year were not unsatisfactory, the profit and output of the company being little different from that of 1957.

Orders for Eland engines have been obtained from Canada and it is hoped to develop this business in America and elsewhere in the world. Napier engines are also used to power four different types of helicopter.

The Napier Deltic diesel engine has proved successful in a number of applications, notably as the power unit in diesel electric locomotives.

Vulcan Foundry Group

Since our purchase four years ago of the Vulcan Foundry, Limited, and Robert Stephenson and Hawthorn, which are the oldest established locomotive manufacturers in the world, an extensive programme of modernisation and re-equipment has been carried out in their workshops. During the past year we began to enjoy the benefits of this investment, and the loss incurred by the Vulcan Foundry Group in 1957 was in 1958 converted into a profit.

In addition to orders for locomotives for British Railways, last year's production included locomotives for Argentina, Malaya, Rhodesia, South Africa and Spain, and we shall be building locomotives during the current year for other overseas railways, including those of East Africa and the Sudan. Orders received from the British Transport Commission and overseas railways ensure that the works of the Vulcan Group will be kept fully occupied during the current year. We are, however, constantly seeking further business so that the fullest use may continue to be made of the productive capacity we have available.

We greatly value the co-operation we have received from the British Transport Commission and are endeavouring to help them with their great task in every way we can.

LANCASHIRE UNITED TRANSPORT

Motor Buses in an Industrial Area

HALF A CENTURY OF PROGRESS

MOST of the larger electric tramway companies in Great Britain were attracted by the possibilities of the motor bus at a fairly early stage in the growth of the bus industry. The idea at first was to test new routes and find out whether there was enough potential traffic to justify the cost of constructing a tramway, and indeed many such early bus routes were later replaced by tramcars. The second phase was the extension of the motor bus into thinly populated rural territory where the tramcar could never be expected to hold its own, but the third phase, of replacing tramcars by buses on routes that were already long established, is rather more recent, although it was initiated as long ago as 1917 at Sheerness. In some towns, such as Bath, Torquay, Swansea or Gateshead, a new company was formed to operate buses in conjunction with the tramways, but in other cases, such as Bristol, Barnsley, Peterborough or Thanet, the buses were operated by the tramway company itself.

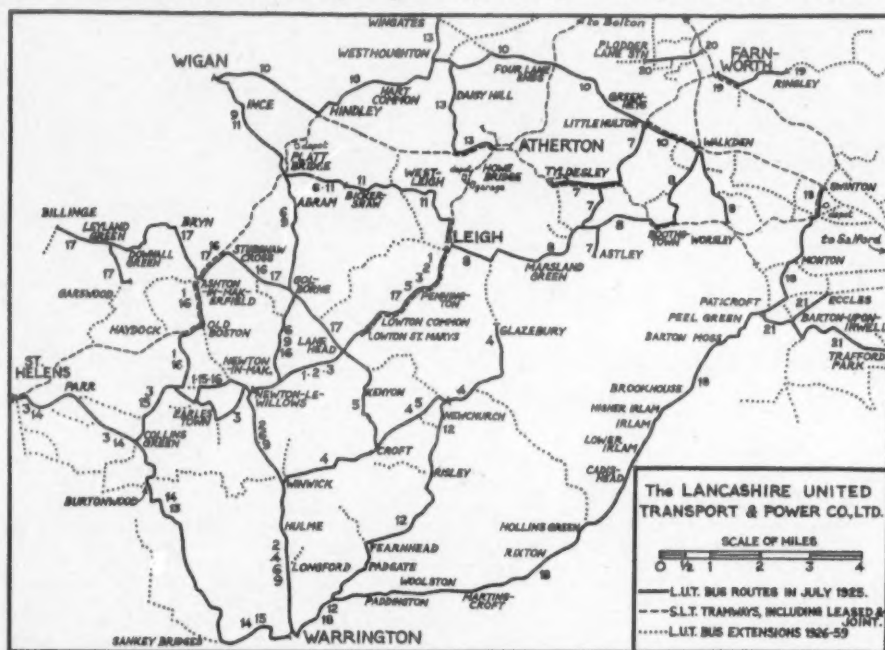
In South Lancashire the position was a little different. Here there was already the statutory South Lancashire Tramways Company, based on the town of Atherton. The whole of the share capital was owned by a separate non-operating parent company, and when the need for working buses arose the new vehicles were placed under the direct care of the parent. The circumstances under which the Lancashire United Tramways, Limited (the parent), was registered on December 29, 1905, have already been outlined in our issue of November 1. At the time the sole function of the L.U.T. was to control and co-ordinate the activities of its three subsidiary companies, of which the other three were two tramway companies

walking, but after a few years passengers became more plentiful and the services were firmly established. The fleet then expanded very rapidly, most of the additions being on Dennis or A.E.C. chassis, though there were also a few Leylands, Daimlers, and Fiats. All vehicles as yet were of normal-control type. The Dennis types included (in 1923) some open charabancs, some saloon buses, some conventional saloon coaches, and at least two saloon coaches with an unusual arched roof section and a transverse-sliding roof which opened in four sections, which it is not disrespectful to say worked on the same principle as a modern dustcart.

In July, 1923, the L.U.T. conveyed two separate parties, each of 700 people, from Liverpool to Blackpool and back, using 27 coaches each time. Even today that would be no mean task, but 35 years ago it was a great achievement. Another big job handled at about this time was for the annual conference of the Institution of Electrical Engineers, when the L.U.T. provided a large fleet of coaches to carry all the delegates from Manchester to Clifton Junction for a works visit. In 1924 some vehicles and bus services were acquired from a Mr. Arthur Robey, and on April 20, 1925, the vehicles and services of Trafford Park Estates, Limited, were purchased. The latter soon required special works services, and today the very heavy concentrations of both buses and passengers at starting and finishing times of the numerous factories in this industrial trading estate really need to be seen to be believed.

Coaches to Telephones

A well-illustrated 100-page book entitled *Towing by Motor Coach* was published by the L.U.T. in



Bus operations of Lancashire United Transport in 1925; the present-day system was shown on a map in our November 1, 1958, issue

at St. Helens and Prescot, and the South Lancashire Tramways Company.

First Motor Buses

The parent company very soon purchased three 14-h.p. Scott-Stirling buses, with which, on Friday, March 23, 1906, it inaugurated a service from Leigh town centre to Westleigh (St. Pauls), about 1½ miles. On Sundays this continued to Leigh Cemetery, on the opposite side of the town. The S.L.T. and its predecessors had had tramway schemes for these two routes in 1896 and 1900, and Leigh Corporation had promoted a similar one in 1903. On July 6, 1906, the L.U.T. started a bus route from Lowton St. Mary's terminus to Newton-in-Makerfield, but after a few months all bus operation was abandoned.

In May, 1914, the L.U.T. purchased three Dennis charabancs and started a programme of motor coach touring, but unfortunately all three were commandeered for military service the following August. The tramway workshops at Atherton were later partly given over to war work, and from May, 1915, onwards they were busy machining 18-lb. high-explosive shells at the rate of 150-200 per week. In March, 1919, the company announced that it was going to develop motor transport on a large scale, and this third attempt proved to be more permanent. Some 25 charabancs had already been ordered, mostly of Dennis make, for delivery in that same spring, but it is doubtful whether all of them arrived as quickly as was hoped for.

A Restart

Three 33-seat charabancs on the 45-h.p. A.E.C. chassis were purchased on March 30, 1920, and further purchases two months later brought the total coach fleet up to 39. Most of these were on Dennis chassis, some seating 14 and some 28. The company charged higher fares in the small vehicles than in the large ones, as they were considered to be more comfortable and to promote a more friendly atmosphere amongst the passengers. Already private-hire trips were working regularly to many coastal resorts in Wales and the North of England.

The L.U.T. purchased two saloon buses in 1919 from Avery and Roberts, of Liverpool, and with these it inaugurated on June 18, 1920, a six-mile route from Lowton St. Mary's terminus, through Newton-le-Willows and Earlestown to connect with another tramway route at Haydock. The company also worked two buses in Liverpool, carrying passengers for the North Atlantic Passenger Conference.

More Bus Routes

After a while local interest in touring waned, so the company converted some of the coaches into buses and inaugurated a 5-mile Leigh-Golborne route, followed later by several others. The public was slow at first to take advantage of the new facilities, and reluctant to get out of the habit of

June, 1925. It gave notes on all towns of interest in an area from North Wales to Cumberland and East Yorkshire, together with details of the extensive tours operated from both Atherton and Liverpool. The company was now offering for hire its 14-, 23- and 28-seat open coaches, also 20-, 29- and 32-seat saloon coaches, and six-seat landaulettes. It also offered public garage facilities, open day and night, at its Howe Bridge headquarters, where it was willing to undertake complete overhauls and repairs to any make of vehicle. The L.U.T. was now the official agent for Bristol commercial vehicles, Scintilla magnetos, and Dunlop tyres; it also retained stocks of spare parts for A.E.C. and Dennis chassis. Its tramcar experience made it especially well qualified for the business of its electrical section, where it offered facilities for all aspects of electrical installation and maintenance. But perhaps the strangest activity of all was to find, in its 1925 bus timetable book, the L.U.T. advertising its willingness to tackle the "installation of private telephone services."

During 1924-26 several batches of Bristol buses were added to the fleet, including six of the I-type normal-control, 10 of the large B-type forward-control, and 10 of the small O-type forward control, eight of the O's being purchased second-hand from the West Riding Automobile Co., Limited, of Wakefield. Some bus services were taken over from Webster Bros., of Wigan, on April 20, 1925, together with four older normal-control Leyland single-deckers and four of the brand-new Leyland PLSC Lion type. After purchasing about a dozen of the SG 11 single-deckers (the immediate predecessor of the PLSC) the L.U.T. also took delivery of seven PLSCs and then another 10, together with 10 double-deckers on the very similar Leyland Leviathan chassis. There were also a few small Unic buses. Bodywork around this period was mostly supplied by Ransomes, Sims and Jefferies, Limited, of Ipswich.

Position in 1925

Development was rapid in the mid-twenties, and by the summer of 1925 the L.U.T. route map was already remarkably similar to that of today, all the main trunk services being already established. The 1925 map is reproduced herewith, and may be compared with the 1958 map in our issue of November 1. The company's territory is completely surrounded by that of Salford, Bury, Bolton, Wigan, St. Helens and Warrington Corporations, Ribbles Motor Services, Limited, and the North Western Road Car Co., Limited, and hence the area of its activities has been prevented from expanding except by joint through-running with other operators.

The centre of the tramway network was, of course, always Atherton, but the bus network was built up more upon Leigh as a centre, there being only one route in 1925 which actually reached

(Continued on page 7)

Atherton. In view of the fact that almost all the buses were garaged at Atherton (Howe Bridge) there was considerable empty running in and out of service. A few buses were kept in the tram depot at Partington Lane, Swinton, and some coaches were garaged in Liverpool, where an inquiry office was maintained at 81 Renshaw Street.

Afternoon Business

Of the 21 routes working in 1925, as shown on the map, only six operated in the mornings. None of the others started until after noon, even on weekdays. Perhaps the busiest route was No. 18, from Swinton to Warrington every half-hour daily after noon, with a skeleton service before noon, and quarter-hourly Saturday extras from Swinton as far as Hollins Green. Routes 1 and 2 gave a co-ordinated hourly service all day every day from Leigh to Newton, splitting there two-hourly for Ashton or Warrington. The 8 (Leigh—Moses Gate) and 10 (Wigan—Walkden) were both hourly all day every day, 10 becoming half-hourly on Saturday and Sunday afternoons. The Trafford Park all-day service (21) had 23 journeys to Eccles, with seven extras in the early morning to Patricroft; serving as it did a factory area it had no Sunday service; this was the one of the four routes that did thus observe the Sabbath, the others being 5, 6 and 20.

Of the afternoons-and-evenings-only routes, the 13 (Atherton—Wingates) and 17 (Leigh—Billinge) were hourly, as was the Tyldesley to Astley part of the 7, though Little Hulton had only a few odd trips on certain days only. The 11 (Leigh—Wigan) ran every 1½ hours, the 16 (Ashton—Golborne—Ashton) every two hours, and the 9 (Wigan—Warrington) and 3 (Leigh—St. Helens) were both every 2½ hours, the 3 becoming every 1½ hours on Friday and Saturday. Routes 4 (Warrington—Glazebury) and 12 (Warrington—Newchurch) fluctuated from three to six journeys per day. Also from Warrington, via Collins Green, the 14-15 group ran every two hours to St. Helens on Saturday and Sunday, and every 2½ hours to Newton-le-Willows on Monday to Friday. On Wednesdays, Saturdays and Sundays only, the 6 ran every two hours from Warrington to Bickershaw, whilst on Fridays, Saturdays and Sundays the 5 worked every 1½ hours from Leigh to Newchurch. Finally, there were two short half-hourly town services at Farnworth, physically isolated from all the other bus routes; these were the 19 to Ringley Bridge daily, and the 20 to Plodder Lane Station on Mondays, Fridays and Saturdays.

Express Developments

Most of these routes are still operated today, although far more frequent, but there has twice been a drastic revision of route numbering. The

covered-top lowbridge bodies and outside staircases. During the next few years a further seven of these were delivered, followed by 10, seven, and then two, all of the same type but with enclosed staircases. Concurrently a large quantity of the highly successful Leyland Lion LT1 and LT2 single-deckers were delivered, in batches of 10, 26, 8, 9, 20 and 8. The L.U.T. started an hourly express service from Bolton to Manchester early in 1927, and by June it had become half-hourly. This route was also one of several operated by J. R. Tognarelli and Company, of Manchester Road, Bolton, whose fleet grew to 26 buses. On December 9, 1929, the Tognarelli business was purchased jointly by the L.U.T. and the Corporations of Salford, Bolton and Oldham, and five of its buses (three Associated Daimlers, a Leyland Lioness, and a Leyland Tiger) came under Atherton control. Soon afterwards, in May, 1930, the L.U.T. purchased the business of William Lees, Limited, of Radcliffe, with a Farnworth—Radcliffe—Bury service.

Joint Services

In the late twenties there was rapid development of through running and joint services with other operators, so that shortly before the coming into force of the Road Traffic Act, 1930, no fewer than 20 of the 46 L.U.T. routes were joint, and with 10 other operators. Jointly with Leigh Corporation there were hourly services from Leigh to Warrington via Risley and via Croft, hourly Leigh—Farnworth, every 45 minutes Leigh—Wigan, and five journeys on Saturdays and Sundays around a Croft circular. Five trips daily between Earlestown and St. Helens were joint with St. Helens Corporation, whilst Eccles—Worsley—Bolton was hourly and joint with Bolton Corporation. An hourly Leigh—Horwich route was joint with both Leigh and Bolton Corporations, whilst St. Helens—Leigh—Manchester was worked jointly with both Leigh and Salford Corporations, hourly via Atherton and half-hourly via Astley.

Between Wigan and Manchester the L.U.T. worked jointly with Wigan and Salford Corporations, every two hours via Atherton and, with Salford, every two hours via Westthroughton. A half-hourly Bolton—Little Hulton—Manchester service was joint with Bolton and Salford Corporations, whilst with Salford alone the L.U.T. worked the half-hourly Manchester—Eccles—Walkden and Manchester—Swinton—Cadishead—Warrington routes. With Bury Corporation there was the half-hourly joint Farnworth—Radcliffe—Bury service.

Long Routes

Some of the joint routes were of considerable length, such as Manchester—Eccles—Warrington—Prescott—Liverpool worked two-hourly and jointly



Guy bus in the L.U.T. fleet with 73-seat Northern Counties bodywork

express service to Blackpool is today one of the company's busiest routes. In daily form this commenced on May 23, 1923, running from Swinton via Patricroft, Irlam, Warrington, Winwick, Golborne, Hindley and Wigan, with a connecting feeder from Boothstown via Atherton to Hindley. Numerous extras were run as required and the fare was 4s. single and 5s. day return. By 1927 there was also a daily Liverpool—Manchester service, and services from Manchester to Southport and Llangollen three times a week.

Fares structure on all the local routes inside the L.U.T. area was 2d. minimum, rising thence in penny stages, but on Monday to Friday the minimum was reduced to a penny on many sections. Higher minimum protective fares were in force on all sections where L.U.T. buses ran over Salford, Wigan, St. Helens or Warrington tram or bus routes; the company's buses had not yet reached Bolton. Parcels by bus were carried on all routes during normal business hours, at rates ranging from 3d. to 9d., including local delivery. By 1927 "anywhere" tickets were issued daily for 2s. 6d., giving unlimited travel over the whole of the company's system, and combined bus and theatre tickets were issued on most routes serving Leigh. By these, residents over a wide area could ride in by bus and see a show from the grand circle at Leigh Theatre Royal for the sum of only 1s. 6d.

Most of the L.U.T. territory is a series of small industrial towns, with numerous collieries between them, but the south-western part is largely agricultural and the south-eastern part is semi-waste land of Chat Moss, whilst to the east the Manchester conurbation is approached. Amongst the industrial installations served are several of transport interest, such as the railway wagon works at Earlestown, the Vulcan Foundry locomotive works at Newton-le-Willows, and the Gardner engine works at Patricroft.

Howe Bridge Garage

There already was at Howe Bridge a bus garage, with major overhaul facilities, on the opposite side of the main road from the tram depot, and on October 11, 1928, a large new extension to this was opened, being 292 ft. long and 86 ft. wide, with 25,112 sq. ft. of clear floor area. The steel roof trusses were of 86-ft. span, and the south wall was of temporary sheeting to permit future extension. Washing and fuelling facilities remained in the old garage immediately adjoining, but new light dock and heavy overhaul bays were included in the new structure, which today still remains the company's largest garage. The opening ceremony was performed by Lord Derby, the brother of the Hon. Sir Arthur Stanley, then chairman of the L.U.T., and the Lord Mayor of Manchester was also in attendance. The company now had garage space for 100 buses at Atherton, 74 at Swinton, 26 at Platt Bridge, and 24 at Liverpool.

On the same day the company also unveiled, inside the new building at Atherton, its new fleet of 10 Leyland Titan double-deck buses with

with the North Western Road Car Co., Limited, or Warrington—St. Helens—Ormskirk—Southport worked every two hours jointly with Ribbles Motor Services, Limited, and St. Helens Corporation. Manchester—Bolton—Chorley—Preston—Blackpool was worked every 15 minutes, despite being no less than 47 miles long, and jointly by Lancs United, North Western and Ribbles. But perhaps the most remarkable of all the joint services was Bolton—Farnworth—Pendlebury—Salford—Manchester—Denton—Hyde, worked every 10 minutes jointly by the L.U.T., Bolton, Salford and Manchester Corporations and the Stalybridge, Mossley, Hyde and Dukinfield Joint Board.

It must be stressed that this astonishing amount of co-operation and through working was achieved entirely voluntarily, long before the licensing procedure under the 1930 Act had come into force, and even longer before the cries for compulsory co-ordination that have been made in more recent times in various quarters. Indeed one of the first actions of the newly established Traffic Commissioners for the North-Western area was to enforce the abandonment of all the numerous cross-Manchester services that had by then been established, including the one from Bolton to Hyde, but Bolton—Manchester is still worked today jointly by the L.U.T. with Bolton and Salford Corporations. The Bury joint service has also been split at Radcliffe, but the 18 others listed above still survive today.

Later Extensions

Manchester—Atherton—St. Helens route has been extended to Liverpool, and Ribbles and St. Helens now share in the workings as well as Leigh, Salford and the L.U.T. There are now three, instead of one, joint routes from Leigh to Wigan, also a new Wigan—St. Helens—Liverpool half-hourly service worked jointly by Ribbles, St. Helens, Wigan and L.U.T. New shorter and local services now worked jointly by Lancs United include five with Warrington Corporation, three with Bolton, two more with Salford, two more with St. Helens and another one with Leigh. There is also a new Manchester—Bolton—Blackburn service, joint with Ribbles and Bolton Corporation, whilst Bolton—Atherton—Leigh—Newton—Warrington was inaugurated as a through service jointly with Bolton and Leigh Corporations on September 29, 1947.

Longest of all the joint routes is that of the Limited Stop Pool, which joins Liverpool, Leeds and Newcastle upon Tyne on an hourly headway basis. Engaged with L.U.T. on this are the Yorkshire Woollen District, North Western, West Yorkshire, United Automobile Services and Northern General companies. The L.U.T. joined the pool, which dates from May 15, 1929, in 1932. The service was begun experimentally by Northern General on May 1, 1928. Altogether the L.U.T. is now involved in 37 joint services, most of which are important trunk lines, whereas only 31 routes are worked entirely by itself.

(To be continued)

Lancashire United and MCW Bodies 1931-1959

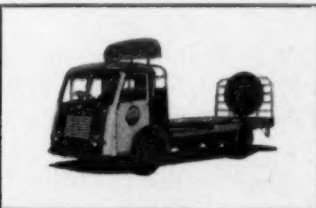


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NEWS FROM ALL QUARTERS

Stations Closing

From April 6, passenger-train service will be withdrawn from Holme, and Yaxley and Farcet Stations, situated on the Great Northern main line south of Peterborough (North) Station. Brindley Heath, between Hednesford and Rugeley on the London Midland Region, also closes on that date.

London—Fishguard Road Improvement

Work is to start shortly on the improvement of a section of the London—Fishguard trunk road, A48, between Flambert Farm, Llanbedr, and the Post Office, Penhow, a distance of nearly two miles. At present a narrow winding road forms a bottleneck between two lengths of road improved before the war. When the scheme is complete there will be a continuous three-lane carriageway throughout.

Swiss Road Tunnel

A new 4,900-ft. long road tunnel, the longest in Switzerland, was recently inaugurated in the Blenio Valley, Ticino. This new connection will be important in the construction of additional power plants to be built in this area. The tunnel will allow traffic all the year round, unaffected by avalanches and snow drifts. One interesting feature of this new road tunnel is its ventilation, which functions automatically according to the contents of waste gases. If the ventilation should fail, traffic lights at both entrances would immediately stop vehicles entering.

Revision of Italian Railway Charges

A renewed attack is being made by the Italian authorities on the problem of standardisation of railway rates within the Common Market organisation now that Dr. H. M. Oettinger, of Germany, president of the International Railway Union (U.I.C.), has paid a visit to the Italian Minister of Transport and the managing director of the Italian State Railways to discuss this problem. For some long time a Bill has been before the Italian Parliament which would give the Government full powers to effect a fundamental revision in the Italian rail rates system, but up to now it has not been tackled. A revised scale of passenger fares has also been prepared and is waiting to go before the ministerial committee.

Railway through Swaziland

One of the first tasks of the new British High Commissioner in South Africa will be to negotiate with the Union Government for the construction of a railway line through Swaziland. The South African Railways and the British authorities are understood to have completed surveys of their respective parts of a route for a line which would run from Piet Retief, in the Transvaal, through Swaziland to Bremersdorp and then southwards to Golele, where it would meet the Zululand line to Durban. The greater part of this line would be through mountainous country. The work would be undertaken by the construction staff of the South African Railways and the line would probably be operated by the South African Railways. Apportionment of financial responsibility is still to be discussed.

Newbury Relief Road

A mile-long relief road for Newbury, Berkshire, running east and west, was opened last week. Built at a cost of £126,000, it is the first of two such roads planned to end the serious delays now experienced in the town.

Tullow Line Finally Closed

The 34½-mile Tullow line of Coras Iompair Eireann which left the Dublin—Cork main line at Sallins was finally closed on March 16. Since 1947 it had had trains only in connection with special events and cattle fairs.

Road Bridge at Ellesmere Port

The Minister of Transport has made a grant of £100,125 to Cheshire County Council towards the cost (£133,500) of building a three-span bridge to carry Station Road, Ellesmere Port (A5032) over the Hooton—Helsby branch of British Railways. The line separates the factory area from residential areas, and the only direct connection at present is by way of a level crossing and a narrow vehicular subway, which was originally a cattle-creep.

Cambridge Line Newsletter

The first issue of a newsletter addressed by Mr. H. W. Few, traffic manager, Liverpool Street, to Cambridge line passengers was distributed on Monday this week. It explains the various inescapable factors contributing to rail service delays and craves the indulgence of passengers while electrification work is proceeding. In the meantime more diesel trains will be used, but it is not practicable to recast the timetables so as to allow more running time on paper.

French Railway Car Trains

A new car-sleeper train service is to be run by French Railways this summer, from June 19 to September 27, between Paris and Avignon, thrice-weekly in either direction. This will be a useful alternative for car owners going to the South of France, Italy, or Spain who cannot secure accommodation on the Boulogne—Lyon car-sleeper express. The latter service is to run on Wednesdays also on July 29 and August 12—September 16 owing to the heavy demand. A car ferry train between Modane, France and Bardonecchia, Italy, via the Mont Cenis tunnel, is now operated at frequent intervals daily from 8.30 a.m. to 6.40 p.m. all the year round. Advance booking is unnecessary.

German Railway Replacement Plans

The German Federal Railway has announced that with its large-scale timetable changes to be introduced on May 31 of this year, a parallel programme of economy in short-distance and local service trains will be started. Trains carrying few passengers will be deleted from the timetable, as well as those which need heavy subsidising for one reason or another for them to be able to run at all. Concentration of these services will, the administration says, be carried out very circumspectly, but it is nevertheless expected that as a direct result of the changes planned, some 2-3 per cent of all local trains will be replaced by bus services and about 5 per cent abolished altogether.

The NEW Firestone SUPER MILEAGE LUG

THE DUAL-PURPOSE REAR-WHEEL TRACTION TYRE with all the features you're demanding

POWER BITE TRACTION

Be it on main roads, by-roads, or no roads the Super Mileage Lug tyre's cross grooves, heavy shoulder lugs and circumferential ribbing will combine to give maximum bite and traction and long safe wear. The dual-purpose Super Mileage Lug helps reduce mechanical maintenance too. Many so-called dual-purpose tyres slip and spin causing undue strain on engines and transmissions. But with the POWER BITE

TRACTION of the Super Mileage Lug, this profit-draining problem is practically eliminated.

MORE SKID DEPTH

Deeper non-skid pattern than in ordinary highway tyres gives thousands of miles of sure-footed highway hauling.

SUPER STRENGTH BODY

Super Gum-Dipped, Tension-Dried cords make a really strong, durable body which gives big dividends in tyre mileage and vehicle efficiency.

OUTPULLS AND OUTLASTS any tyre of its kind.
 Specially designed for on-and-off-the-road service where a large part of the work is off-the-road and particularly severe.

EXPERIENCE COUNTS 45 Factories throughout the world. Firestone total sales exceed £1,000,000 per day.



COMMERCIAL AVIATION

I.A.T.A. Clearing House in 1958

SWISSAIR CAPITAL

MORE than \$820 million (£292 million) in international airline business was settled through the I.A.T.A. Clearing House in London last year, the International Air Transport Association has announced. The figure established a record in total clearance which is 28 per cent above the 1957 peak of \$639 million (£231 million). Total turnover for during the 12 years of the I.A.T.A. clearing facility amounts to \$3,640 million (£1,300 million). The clearing house, which settles accounts between the airlines in both dollars and sterling by offsetting members' counterclaims, eliminated the necessity for cash payment of 88.9 per cent by value of all transactions cleared through I.A.T.A. during 1958. In 20 cases the offset on individual member's monthly clearances exceeded 99 per cent, and in seven of these the offset was 99.8 per cent or better. The number using clearing facilities during the year increased from 85 to 94. This includes both I.A.T.A. members and 22 U.S. domestic carriers served by inter-clearance arrangements with the Airlines Clearing House Inc. (A.C.H.) in the United States. Inter-clearances with A.C.H. totalled \$31,468,594 for the year, a rise of 18 per cent on the 1957 total of \$26,597,808.

The two devaluations of the French franc, and the extension of free convertibility of sterling which occurred a few days before the end of the year were special features affecting the clearing house in 1958. In the case of French franc claims the appropriate pre-established special settlement procedure was applied to those received after the devaluations, but relating to the pre-devaluation periods, and affected clearances were settled within the usual periods on each occasion. The extension of free convertibility of sterling due on external accounts enables the clearing house to broaden its scope of clearance and make available further facilities to its members. Cost to members of the services of the clearing house was less than 14 cents per \$1,000 of gross receivables, or approximately 3½d. per £100 of sterling claims for the year. The clearances for any given month in 1958 were settled on the average, within 13 days after each month's closure.

Sabena to Tangier

Sabena will extend their existing weekly Brussels-Lisbon via Madrid service to Tangier, every fortnight from May 2 to September 20.

B.E.A. Freight Traffic Increase

While airline passenger traffic suffered during the 1957-58 recession, freight revenue of British European Airways continued to grow with 26,500 tons of air freight carried by freight and passenger aircraft, an increase of 18 per cent over the previous year. This figure represented a total of £1,686,000 in air-mail revenue and £2,032,000 in general freight revenue. B.E.A. is now operating over 100 all-freight services each week but 64.3 per cent of the total cargo is carried in the holds of scheduled Viscount and Pionair passenger services. This percentage will increase again when the new Vanguard fleet enters service next year.

New Services Approved

The Minister of Transport and Civil Aviation after considering the recommendations of the Air Transport Advisory Council, has approved the operation of the following services:

A normal scheduled service between Manchester (Ringway)—Luxembourg (optional)—Innsbruck; Eagle Airways, Limited, until April 30, 1965. (Service to be integrated with that approved under Application No. 373 during winter 1958-59 only so as to provide a service on the route Manchester—London—Luxembourg—Innsbruck but without traffic rights between Manchester and London.)

A coach class service between Dar-es-Salaam, Nairobi, Entebbe and London; East African Airways Corporation, until January 13, 1960.

An internal service between Croydon and Brawdy; Morton Air Services, Limited, until February 8, 1960.

An inclusive tour service between Birmingham and Palma; Eagle Aviation, Limited, until November 2, 1961.

An inclusive tour service between London (Blackbushe) and Basel; Eagle Aviation, Limited, until September 13, 1960.

An inclusive tour service between London (Blackbushe) and Saragossa; Eagle Aviation, Limited, until November 2, 1961.

Swissair Proposes Capital Increase

An increase in Swissair's share capital from Sfr.63 to 105 million will be proposed at the annual general meeting on April 9. If approved the increase will be made by an issue at par of 120,000 new registered shares of 350 francs nominal each. The last capital increase, from 42 to 63 million Swiss francs, was made in April, 1958. The Swissair accounts for 1958, to be submitted to the meeting, show total revenue for the year at Sfr.252 million (£20,656,000) and expenditure, after appropriations to depreciation and reserves totalling Sfr.28.5 million, at Sfr.247 million (£20,246,000). In the preceding year revenue totalled 210 million francs and expenditure 207 million. Net profit for 1958 amounted to 5,101,613 francs, to which is to be added the previous year's carry-over of 367,057 francs. The board has recommended a dividend of 6 per cent for 1958 (same as for 1957). In addition, 600,000 francs are to be allocated to statutory reserve and one million francs to the staff pension fund. A balance of 403,670 francs would be carried forward.

Ansett-A.N.A. Viscounts Start

The new Vickers Viscount 810 series airliner was scheduled to enter service in Australia on March 20 with Ansett-A.N.A. which thus becomes the 40th airline to introduce the Viscount. The first of Ansett-A.N.A.'s four Viscount 832s (VH-RMG) was accepted at Weybridge on March 12, left for Melbourne the following day and arrived on March 17. This aircraft was the first of the Viscount 810 series to be certificated at the new maximum take-off weight of 72,500 lb. The original specification gross weight for the V.810 series was 67,500 lb. but all the aircraft delivered to date have been certificated at 69,000 lb. The latest certification weight, achieved 10 weeks ahead of schedule, makes the V.810 virtually "a full fuel, full payload" machine and reduces the seat-mile cost at extreme range by 23 per cent. All Viscount 810 series being delivered from Vickers have the necessary structural modifications to permit operation at 72,500 lb. and in the case of aircraft delivered without these modifications, the majority of operators is embodying them retrospectively. As an interim measure, pending delivery to all operators of the latest Dunlop brake equipment which is required to permit 72,500 lb., a number of operators including Lufthansa and South African Airways will be cleared for operation at 71,000 lb. from the beginning of April.

PRESIDENT-ELECT OF THE INSTITUTE OF TRANSPORT



Lufthansa

Mr. R. G. GROUT, M.Inst.T.

At the annual dinner of the Institute of Transport the president, Major-General G. N. Russell, C.B., C.B.E., M.Inst.T., announced that his successor in office for the session commencing on October next would be Mr. Reginald George Grout, M.Inst.T., chairman and managing director of the General Steam Navigation Co., Limited. Mr. Grout joined the General Steam in May, 1919, and after head office experience was sent to Ostend, and later to Havre and Paris. In 1928 he was appointed manager of the company's branch at Havre, and ten years later at Antwerp. He became secretary of the company in 1941 and in 1943 was seconded to the Sea Transport Division of the Ministry of War Transport. Mr. Grout went to Normandy with the British Liberation Army as civilian representative of the Director of Sea Transport, work for which his flair for languages and intimate acquaintance with country and people made him particularly suited. He returned to England in January, 1945, as Assistant Director of the Coasting and Short Sea Division of the Ministry of War Transport, where he stayed for nine months. He returned to the company, and in 1947 was elected to the Board. In 1952 he again went abroad, this time to the Suez Canal Zone as Ministry of Transport Representative, Middle East. Two years later he was appointed vice-chairman and managing director of the General Steam, and in September, 1958, succeeded the late Mr. I. M. Hooper as chairman. Mr. Grout is also chairman and managing director of the Moss Hutchison Line, Limited, chairman of Grand Union (Shipping), Limited, Great Yarmouth Shipping Co., Limited, New Medway Steam Packet Co., Limited, and Turner Edwards and Co., Limited; he is deputy-chairman of Silver City Airways, Limited, and is on the boards of the Peninsular and Oriental Steam Navigation Company, British Aviation Services, Limited, and the London Scottish Lines. He is a Fellow of the Institute of Chartered Shipbrokers; a member of the Institute of Transport; of the council of the Chamber of Shipping; of the committee of the London General Shipowners Society; of the London Steamship Owners Mutual Insurance Association; of the Management Committee of the t.s. "Worcester"; of the Commission of the Seafarers Education Service; and a member of the board of management of the Royal Alfred Merchant Seamen's Society. He is hon. treasurer of the British Ship Adoption Society, and president-elect for 1959-60 of the Institute of Shipping and Forwarding Agents. Mr. Grout is a Freeman and Liveryman of the Worshipful Company of Shipwrights and an Honorary Freeman of the Company of Watermen and Lightermen. He was a member of council of the Institute of Transport during the years 1948-51, 1953-55 and 1957-58, and was a vice-president, 1955-57. He served at different periods on the examinations, journal and awards, finance, and shipping advisory committees of the council, being chairman of the last-named, 1954-58.

IN PARLIAMENT

Road Accident Rate

FOG DISPERSAL TRIALS

THE Minister of Transport refused to recommend the appointment of a Royal Commission on the causation and prevention of road accidents. Moreover, he would not accept that the road accident figures are out of control. If they were studied in relation to the growth in the number of vehicles, it would be found that the growth in the number of vehicles was much faster than the relative growth in the number of accidents.

B.O.A.C. Economy Measures

B.O.A.C. made a thorough examination of its engineering costs some time ago and concluded that there was scope for substantial economies in stock-holding and staffing, Mr. H. WATKINSON said. The Corporation had therefore rightly sought to make the necessary adjustments as quickly as possible and had been in consultation with the trade unions for some months.

Airport Charges

The increases in aircraft landing fees will become effective from April 1, said the Minister of Transport. In the case of the passenger service charge—which is levied on the airlines but passed on by them to the passengers—he was arranging for a month or so's grace beyond April 1 to be given in order that airlines can complete collection arrangements with United Kingdom travel agents.

Vehicle Enforcement Staff

Mr. G. R. H. NUGENT, the Joint Parliamentary Secretary, M.O.T., said that 100 examiners, the full establishment, are at present engaged full-time on statutory goods vehicle enforcement, including 97 who are permanently so employed. The three vacancies which have recently occurred in the complement of 100 permanent enforcement staff will be filled shortly.

Fog Dispersal Trials

Research has been conducted into the possibility of extracting moisture from the air over very limited areas by spraying with a chemical solution, the Secretary of State for Air told a questioner. Preliminary calculations have been made and laboratory trials completed: field trials, covering an area of about 30,000 sq. yd. have been held at Cardington. They have shown some promise. The cost of materials for such small-scale trials amounts only to about £100.

Labour Required in Road Schemes

At the end of September last, work was in hand on new road works and major improvements expected to cost £55 million, and nearly 21,000 men were employed, said the Minister of Transport, i.e., 380 men for £1 million. On the London to Birmingham motorway, a maximum of about 4,000 men are employed on 53 miles of road, or about 75 men a mile. He agreed that modern road construction did not directly absorb very large numbers of people.

Future of Belfast Airport

Mr. KNOX CUNNINGHAM asked the Minister of Transport and Civil Aviation to state the policy of his department with regard to the future of Nutts Corner Airport (Belfast). The Joint Parliamentary Secretary, Mr. J. A. HAY, said that the Secretary of State for Air had agreed in the light of a recent reappraisal of military plans that a study should be made of the possibility of joint user of the R.A.F. station at Aldergrove. The joint study had already been started, and would be completed with all possible speed.

Cost of Fog to Airlines

Mr. J. RANKIN asked the Minister of Transport and Civil Aviation what financial losses had been incurred by the nationalised corporations and other airline operators by disruption of their services this winter by fog. Mr. J. A. HAY said he was informed that B.E.A. estimated that it lost about £200,000 this winter because of bad weather. B.O.A.C. thought its losses through fog were negligible. Mr. F. BESWICK: The Parliamentary Secretary to the Ministry of Supply said that it would cost £150 a landing to use the new F.I.D.O. system. Have the Corporations or other operators been asked whether they would be prepared to meet a bill of £150 in order to avoid diversions? Mr. HAY: I do not think that they need to be asked. I just do not think that it is a possibility for them to meet that sort of charge for landings and take-offs. Our objective is to try to find either some method for dispersing fog at a much lower cost than F.I.D.O. or some other method.

BOOK NOTICES

Some 1959 Editions

HIGHWAY HOLIDAYS, 1959. (London: Index Publishers, Limited, 69 Victoria Street, S.W.1. Price 2s. 6d.) The new edition of this guide to coach tours and holidays in the British Isles and on the Continent contains considerably more tours and operators than its predecessors and also articles on touring abroad and in Britain. The latter by Mr. J. F. Saxton, director of Glendon Tours, Limited, includes a commendably succinct outline of the history of coach tours.

A.A. HANDBOOK, 1959-60. (London: Automobile Association, Fanum House, Leicester Square, W.C.2. Free to members.) Each year this invaluable guide for the ordinary motorist and the tourist manages to include a number of new features. These embrace on this occasion the listing of 33 patrol service centres based on various roadside telephone boxes and mobile offices, a code of conduct for using the new motorways—the course of these is marked on the maps—and first-aid hints.

HOLIDAY HAUNTS, 1959. Nos. 1 to 5. (London: British Railways, 222 Marylebone Road, N.W.1. Price 1s. 6d. each.) The annual publication of these five holiday guides which, between them, cover the whole of Great Britain. For those statistically minded they contain between them nearly 10,000 holiday addresses, 600 photographic illustrations and 1,600 pages of other information. There has been a marked improvement in the cover designs and the major weakness remains the inclusion at the back of each volume of the general map of British Railways which is really of little value. The actual text matter is commendably concise, but more information on bus services would be useful.

COR-TEN IS STILL NEWS

In 1954, for the first time in Britain on a wide continuous strip mill, The Steel Company of Wales began the manufacture of scw Cor-Ten.

Today, five years later, the range of application for scw Cor-Ten continues to grow as more designers and more users discover new ways in which they can take advantage of its outstanding properties.

Photograph by courtesy of Caterpillar Tractor Company Ltd.



COR-TEN IS TOUGHER

- Weight for weight, the yield strength of scw Cor-Ten is 50% higher than ordinary mild steel
alternatively
Strength for strength, a saving of $\frac{1}{3}$ of the weight is possible
- 4-6 times more resistant to atmospheric corrosion
- Highly resistant to abrasion and fatigue

COR-TEN SAVES MONEY

- Initial costs are spread over a longer service life
- Maintenance costs are reduced
- Operating costs are lowered—in transport applications payloads are bigger because of reduction in tare weight

Please write to us at the address below for further information or for technical assistance in the application of scw Cor-Ten to your products

Wherever higher strength or greater resistance to atmospheric corrosion offer economic advantages, scw Cor-Ten has been used. Where corrosion and abrasion are both present (as in the case above) scw Cor-Ten's outstanding advantages are particularly effective.

S·C·W BRAND Cor-Ten



RAILWAY ROLLING STOCK
AGRICULTURAL AND EARTH-MOVING EQUIPMENT
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ROAD VEHICLE INDUSTRY

B.M.C. to Assemble in Rhodesia

TALKS in Rhodesia between the Hon. F. S. Owen, Minister of Commerce and Industry, and Sir Leonard Lord, K.B.E., chairman of the British Motor Corporation, have resulted in agreement to establish an assembly factory in the Federation. Announcing this last week, Sir Leonard said that the decision to go ahead was made possible by the very helpful attitude of the Government. The factory would be established in Umtali, where the corporation had recently acquired a large site in an industrial area now being developed by the municipality. The design of the factory, having a floor area of 150,000 sq. ft., will be very similar to the corporation's assembly plant at Blackheath, near Cape Town. Vehicles should be in production by mid-1960.

New Steam Cleaner

THE Det-On steam cleaner is an independent mobile unit needing only two connections, to a power point and water supply by means of a flexible coupling. Within three minutes of switching on, the unit is in full working operation



The new Det-On steam cleaner

producing a jet of steam mixed with boiling water. To this can be added, when required, a predetermined proportion of detergent solution. Every type of detergent is acceptable and will vary with the nature of the work to be done, e.g. cleaning, de-greasing, paint removing, etc. A feature of the unit is that detergent solution is injected into the steam circuit after it has passed the heating coil. This part of the unit is fully protected, therefore, from damage through contact with a detergent. Any water supply is suitable and 110 imp. gal. of water can be transformed into steam at a pressure varying from 85 to 180 p.s.i. according to the pressure of the water supply. Alternatively the unit can produce 220 imp. gal. of hot water for immediate use. The unit is heated by a fully automatic jet type oil burner; a single-phase 1-h.p. motor drives, by means of a direct coupling, the water pump, burner pump and burner fan. The cleaner is very compact, measuring 2 ft. wide, 3 ft. 4 in. long and 3 ft. 7 in. high. It will be in production shortly and the distributors are being appointed for the whole of Great Britain. In the meantime all details, including price and technical literature, can be obtained from the Det-On Division, Wanson Company, Limited, 7 Elstree Way, Borehamwood, Herts.

Dodge Sales Drives

SINCE January Dodge Brothers (Britain), Limited, has been holding a series of intensive commercial vehicle sales weeks, based on its distributors throughout the country. The accent is on practical demonstrations and the object is to give operators the opportunity of using Dodge lorries under conditions of their choosing, doing their own jobs entirely without obligation. Users in the area are invited to book a Dodge for demonstration during the week and a demonstration convoy from Kew is centred on



Perkins engines power a large number of ambulances operated by county councils. Left, one of 31 Trojan sitting-case vehicles with P3s and 38 Dennis with P4 engines of Middlesex which has 20 more Perkins-powered units on order; right, one of eight Hertfordshire Daimlers with P6 engines

the local distributor, while the manufacturer's sales and demonstration staff are in attendance. Mr. Wendell S. Clough, the managing director, attends many of these "demo-drive" weeks as they are called and feels that this positive and practical sales approach is the best and most direct way of putting across the Dodge story. Distributors and operators consider the drives very successful and the present series is planned to continue until October. They have already been held in Birmingham, Bristol, Derby, Leicester, Leeds, Shrewsbury, Sheffield, Reading and Blackburn and the following drives are scheduled for the next few weeks: Preston (March 31-April 3), Northampton (March 31-April 3), Thornton Heath, Surrey (April 6-10), Hadleigh, Essex (April 6-10) and Bedford (April 13-17).

Heating Systems for Ramps

ONE of the many uses of Panelac rewirable heating systems is exemplified in London in the new Lex Selfridge Garage off Oxford Street. A heating system has been installed beneath two of the three traffic ramps, one leading from the street to a first-floor garage and the other providing goods vehicles with easy access to the loading bays. The system is thermostatically controlled and will operate automatically when the temperature falls below freezing point. This will prevent ice from forming on the ramp at any time. The system can also be switched on manually before the tempera-

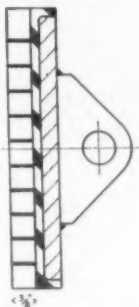
ture falls to freezing point, as for instance when snow is expected. The system is a standard product of Panelac (Great Britain), Limited, slightly modified for this particular job, access troughs being situated so that the cables may be easily removed at any time without damage or interference to the road surface. Since the cables are contained in housings there is an added advantage insofar as the cables will not be damaged by any movement of the concrete.

Simple Paint Spray

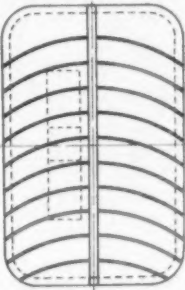
INTRODUCED recently by the Aerograph-DeVilbiss Co., Limited, 47 Holborn Viaduct, E.C.1, the Tuffy paint spraying outfit, is designed for small-scale industrial work. It consists of an electrically driven diaphragm-type compressor which weighs only 34 lb. and can be plugged into an ordinary lamp fitting, 12 ft. of air hose and a CGA cup feed spray gun with a one-quart capacity. As a diaphragm-type compressor is used, there are no exposed belts, pulleys or flywheels, no oiling required and no valves to get out of order. It has a capacity of 2 cu. ft. per min. of air delivered and there is a built-in air pressure control and safety valve. The spray gun is fitted with a fluid needle adjusting screw that controls the maximum volume of paint that will pass through the gun and is also a useful form of adjustment for misting, shading and similar jobs. The cost is £44 10s. complete.

Non-Slip Pedal Pad

PEDAL pad which, it is claimed, keeps its non-slip characteristics five or six times as long as a rubber-covered pad with a conventional tread pattern has been developed by Metalastik, Limited, Leicester. The new pad, for which patent protection has been sought, is based on principles followed in the design of a modern tyre tread. Narrow grooves or sipes, as they are called by the tyre tread designer, are formed in the pad. Under pressure the sipes provide a surface that retains a high coefficient of friction until the pad has worn down to their full depth



The Metalastik pedal pad



of $\frac{1}{8}$ in. The normal pedal pad tread is often no more than $\frac{1}{16}$ in. deep and when this wears smooth, as it can in six to nine months on the average commercial vehicle, the pad loses its efficiency. In the new Metalastik pad, the sipes are arranged to give the maximum resistance to slip, sideways as well as forwards and, as on a tyre, they have a self-cleaning action.

Sprayer Exchange Service

USERS of Gardner diesel engines will benefit considerably in both the saving of money, and increased efficiency, by the sprayer exchange service operated by Norris, Henty and Gardners, Limited. It offers for the low charge of 9s. 8d. each to exchange, when necessary, the sprayers in Gardner engines for fully reconditioned ones. These works-reconditioned sprayers are fully tested, and equal in all respects to new ones. The maker points out, in fact, that these sprayers will

need no attention for at least 40,000 miles. Fully reconditioned Gardner sprayers are available at the London and Glasgow service depots, through appointed agents, and direct from the works.

New Versions of Thornycroft Mastiff

TWO additional chassis types in the Thornycroft Mastiff 14-ton g.v.w. range are now in production. One, a 14 ft. 6 in. wheelbase chassis, is particularly recommended for the mounting of bulk liquid tanks. The specification follows that of the standard 16 ft. 6 in. wheelbase and 12 ft. 6 in. wheelbase Mastiff chassis, but the changes in dimensions and weights are as follows:

Recommended maximum body length	18 ft.
Overall length of chassis	24 ft.
Unladen weight of chassis in licensing order	8 tons 15 cwt.
Additional weight of Thornycroft reinforced resin cab	5½ cwt.

The Mastiff is also available as a 4 by 2 tractor with a wheelbase of 9 ft. 6 in. when the recommended gross train weight is 20 tons. Dimensions and weights then become:

Rear of cab to centre line of rear axle	7 ft. 11½ in.
Overall length of chassis	16 ft. 9½ in.
Chassis weight in licensing order	3 tons 15 cwt.
Additional weight of Thornycroft reinforced resin cab	5½ cwt.
Weight of semi-trailer, fifth wheel and payload	15 tons 13½ cwt.
Weight of equipment	6 cwt.

Optional equipment offered for this tractor chassis includes additional fuel tankage, two-speed rear axle on 10.00-20 in. tyres instead of the standard 9.00-20 in. 12-ply tyres.

BARIMAR Scientific Welding Salvaged Giant Shearing Machine



The owners of a big shearing machine were faced with a critical situation when the 4-ton body of this machine was broken in two places. They had two alternatives—should they (1) Sanction the expense of a new machine, or (2) Ask Barimar to repair the broken body of the present one? The firm decided on the sensible thing—Barimar was asked to put the casting right again. Far less expense, and it was done "In double-quick time!"

The damage was extensive, as the illustration shows; two large pieces were broken away, and the metal was up to 4 inches thick. The fractures were several feet long, and the broken pieces had to be replaced exactly in position, strongly welded. Various parts of the casting were also re-machined to an exacting accuracy. The welding completed, the casting was rigorously tested for strength, and finally tagged with the famous Barimar Money-back Guarantee.

The repair was urgent, for this was a "key" machine employed by the owners—a firm of iron and steel merchants—to cut large sections of metal to size. The repaired casting was returned to them by Barimar in record time, thus avoiding a serious hold-up in the deliveries of their steel orders.

This four-ton job is a typical example of the Barimar Scientific Welding Repairs Service.

In cases where it is difficult to transport damaged machinery Barimar "Flying Squads" will tackle repairs "on-site," any time, anywhere—thereby reducing hold-ups to the minimum.

BARIMAR is at Industry's service day and night, and also is the engineer's dependable stand-by in any emergency.

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Most Breakages to Motor Parts can be Repaired by Barimar at a Big Saving on the cost of New Parts.

CYLINDER BLOCKS: Every kind of crack and fracture, broken bores, scored bores, damaged stud housings, cracked, burnt, pitted and sunken valve seatings.
CYLINDER HEADS: Broken and cracked heads, cracked and worn valve seats, chipped, warped or damaged faces, broken rocker standards, defective camshaft bearing housings, cracked stud holes, stripped plug threads. IRON OR ALUMINIUM.
CRANKCASES: Fractures caused by broken connecting rods and run big ends, broken-off bearing arms, smashed sumps, cracked stud housings, broken bearing and flywheel housings, stripped drain plug threads. IRON, ALUMINIUM OR ELEKTROL.
CRANKSHAFTS: Broken across web or journal, cracked, scored, threads stripped, splines or tapered worn.
TRANSMISSIONS: Cracked or broken gearbox and axle casings, damaged gear teeth, worn splines and tapered shafts, cracked differential casings.

Have you a Delivery Problem?



A stylish Luton-type van in Homalloy light alloy and plastic on the B.M.C. 5-ton L.W.B. Chassis. The total capacity is approximately 1,550 cu. ft.

Then specify

Homalloy
LIGHT ALLOY REGD.



For reasons of strength and economy, the cab forms an integral part of this smart Homalloy van body built on the Morris LCFO-M Chassis. The side panelling and roof of the body are plastic.

All Homalloy-designed van bodies can be modified to meet your individual requirements. Alternatively, we shall be pleased to build to your own specification. Remember, there's a Homalloy commercial vehicle body in light alloy and/or plastic to fit every type of chassis.

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INTERESTING BRIDGE REPLACEMENT

Lifting in Spans with Wagon Gantries

SO far as railway civil engineering is concerned, overhead electrification is a severe handicap. In effect it encloses the tracks in a box-like framework of gantries and wiring; these so restrict crane operations that many orthodox practices have to be reconsidered in the light of new techniques.

An interesting example of this is now being dealt with on the Eastern Region main line at the London end of Bethnal Green Station. This job involves the reconstruction of two 88-year-old wrought-iron girder bridges (Nos. 21 and 22) which carry the six tracks over Vallance Road and Hemming Street. The work commenced early this year with Bridge 22, and has since gone on during a series of weekend possessions on Saturday and Sunday nights, arranged to cause only a minimum

impracticable, not only on the grounds of expense and inconvenience, but also because the complications involved would have meant extending the nine-hour period of each possession. It was therefore necessary to devise a method of lifting in the spans whilst the overhead equipment remained in situ, and the fact that this has been accomplished in a relatively cheap and simple manner, is typical of the routine efficiency with which railway engineers solve so many awkward problems. This, of course, was carried out under the general direction of Mr. A. W. Terris, chief civil engineer, Eastern Region.

As often happens with projects of this kind, the work involved is not confined to the main task, since possessions must be utilised to the fullest advantage, and provide an opportunity to do as

certain alterations to the platforms of Bethnal Green Station, which are to be shorn of 15 ft. at the London end and are to run 135 ft. farther east, giving room for longer trains. These are but a few of the alterations in progress; they serve to illustrate how one initial operation can lead to a complex programme that requires a very careful system of planning. The staging enables the entire work to be broken down into sequences, which are, of course, determined by many factors, and in particular the needs of the traffic department.

As already mentioned, the normal method of



Lifting in one of the spans of the new bridge

centre track between them, and then move forward over the bridge and deposit the span as required. The accompanying line drawing shows the general construction of these wagons, and also the formation used to move the span into position.

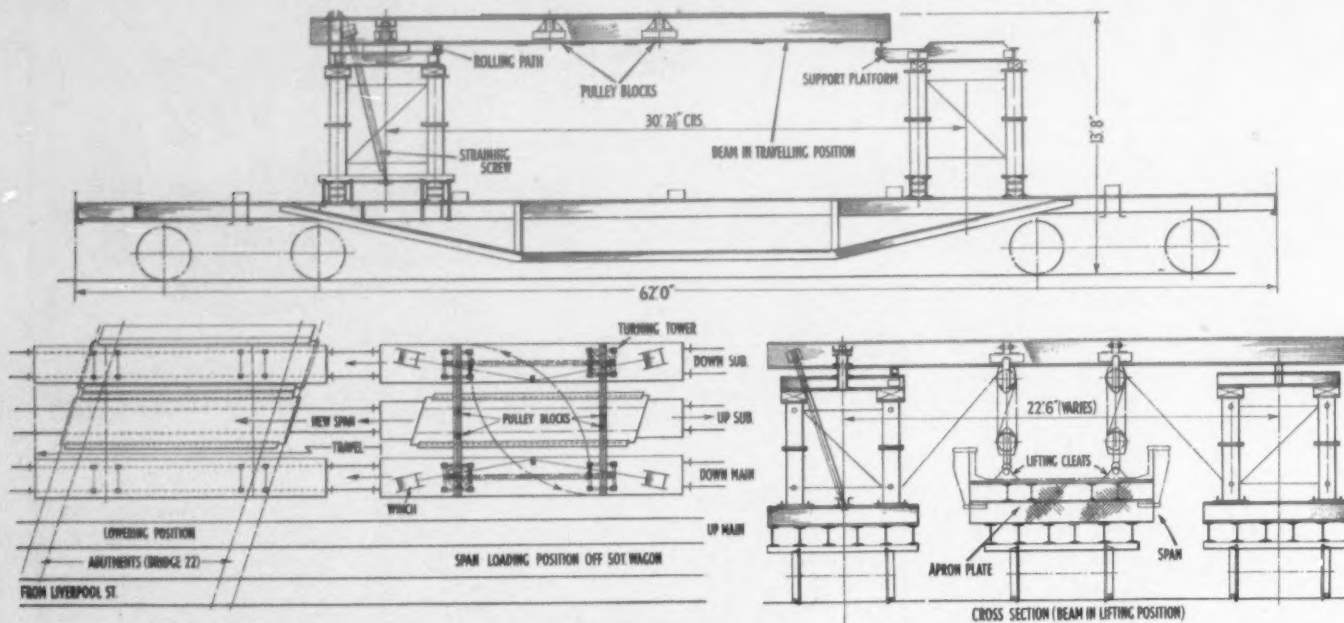
However, while it is clear from the drawing that this method holds good for the inner spans, it will at once be apparent that it does not solve the problem of getting the outside spans into place. To get round this difficulty a start was made by replacing the second span in, which carries the up suburban line. Hemming Street was then closed to all vehicular traffic so that trestling could be erected under the bridge. On this trestling were placed steel girders to carry the decking of the old bridge, and in addition, steel waybeams were placed in position from the trestling to timber cribs at the back of the brick abutments, in order to carry the tracks until their removal shortly before the insertion of the new span. Then the main girder of the original bridge could be removed and the tops of the abutments prepared to take the bearings of the new span. The old girder was then cut up into pieces and removed from rail level by a 5-ton short-jib steam crane, able to work well clear of the overhead equipment.

Placing the New Spans

When this was done, and the track and supporting waybeams were removed, it was possible to place the new span. Since the spans are an out-of-gauge load, they have to be brought from the Millwall premises of Westwood and Co., Limited, by road to Spitalfields Yard, a transit for which Pickfords (Heavy Haulage), Limited, is responsible. They are transferred at Spitalfields to the Salmon wagon, and marshalled into a train with the two gantry-fitted wagons, for conveyance to Bethnal Green. Here the train is broken up and the wagons re-marshalled so that the wagon carrying the span stands on the track leading to the gap in the bridge. The two gantry wagons are then placed on adjacent tracks, one on each side of the span wagon; they are then moved into a position where all three stand in alignment just short of the bridge.

The gantries are swung out in the manner shown in the drawing, and attached to the lifting cleats on each end of the span. The span is winched up about 12 in. clear of the wagon on which it rested. The wagon is then drawn away leaving the span suspended from the gantries. Since the track at this point is on a 1 in 80 down grade towards the

(Continued on page 14)



Outline drawing showing side elevation of wagon in travelling position; below, wagon formation for lifting in the span, and cross-section of the beam in lifting position

amount of interference with the normal train services.

New Method Needed

Ordinarily the work of lifting in the six separate girder spans of each bridge would have been done by two 45-ton steam cranes at the rate of one span for each possession. This would have meant the dismantling and re-erection of the overhead installations, and a consequent interference with the electric services on each occasion, and was deemed

many jobs as possible at the same time. In the present instance the junctions at the country end of Bethnal Green Station have been relaid on a better alignment, which also permits platform extensions, new gantries for the forthcoming 25,000-volt electrification have been erected on the Hackney Downs lines, and the double junctions between the up and down main and the up and down suburban, formerly located partly on Bridge 22, have been removed off the bridge—an improvement which in turn, has meant

lifting in each 40-ton span would be with 45-ton steam cranes; whereas in this case the only crane capable of working under the overhead installations was limited to 5 tons. Since it was evident that whatever method was used the spans still had to be lifted in, it was evident that this had to be done without the use of cranes. This was effected by modifying two 62-ft. long Salmon type bogie wagons as mobile gantries which when operating on intermediate tracks, and in unison, could lift the span off another Salmon wagon placed on the



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TRUNK RAILWAY PROJECT IN JAPAN

Adoption of 4 ft. 8½ in. Gauge

MAXIMUM SPEED OF 155 M.P.H. CONTEMPLATED

EXCITING prospects of the future of rail travel are opened up by the Tokaido Line project of the Japanese National Railways. This envisages construction of an entirely new main line between Tokyo and Osaka, a distance of about 310 miles, and in order to extract the best possible results at least cost, it is proposed to go away from the standard Japanese gauge of 3 ft. 6 in. and adopt the world standard gauge of 4 ft. 8½ in. The maximum speeds for which the line will be laid out are 155 m.p.h. for passenger trains and 93 m.p.h. for freight. The journey from Tokyo to Osaka would be traversed at an average of 106 m.p.h. in about 3 hr. by express passenger services and freight would cover the journey at 56 m.p.h. in 5½ hr.

Present Situation

The Tokaido trunk line (Tokyo—Kobe) of the Japanese National Railways is the most important line in Japan. It links more than 40 cities, including key industrial and economic zones, such as the Tokyo—Yokohama, Nagoya and Osaka—Kobe areas. The route length of the line is no more than 590 km. (367 miles), or 2.9 per cent of the entire system, but more than 36,000,000 people, around 40 per cent of the total population of the country, live along the line and the density is probably unparalleled anywhere in the world. Moreover, more than 60 per cent of the population increase during the last five years centred in these areas. The manufacturing output of the industrial zones located along the line constitutes more than 60 per cent of Japan's total output.

Traffic on the Tokaido Line is therefore extremely heavy. It accounts for about 24 per cent of the total passengers (17 per cent, excluding those carried by multiple-unit electric trains in and around Tokyo and Osaka) and about 23 per cent of the total freight tonnage carried on the Japanese National Railways. From 60 to 80 passenger trains and from 50 to 60 freight trains are operated each way a day. The rate of increase of both passenger and freight traffic on the Tokaido Line has been higher than the J.N.R. national average and will most probably keep on increasing year after year.

Electrification

Under the circumstances, various measures have been taken to augment the capacity of the present line, the most notable of which was the completion of the electrification of the entire line in 1956. Consequently, as a long-distance, double-track, narrow-gauge (3 ft. 6 in.) railway, the route has come to attain the highest efficiency in the world. But since the practical capacity of the line has almost reached a point where it will not be able to meet any substantial future increase in demand, fears are being entertained that its limited capacity may prove a deterrent to Japan's future economic development. At the most conservative estimate, the J.N.R. will have to carry in 1975 about twice as many passengers and 2.2 times as much freight as it did in 1956.

It is, of course, necessary to estimate the future traffic volume of the Tokaido Line by taking into consideration the relations between the J.N.R. and other carriers. The greatest effect on Tokaido Line traffic is likely to be that of the projected superhighway between Tokyo and Kobe. Similarly, the possible effect of both aircraft and shipping must be taken into account.

Superhighway Competition

The executive secretaries of the Council of Ministers relating to traffic studied the possible influence of the prospective superhighway on the Tokaido trunk line. An analysis was made by dividing the areas relative to the Tokaido trunk line into small economic blocks. On this basis an estimate was made of such amounts of traffic as would possibly be diverted from rail to highway transport. It is therefore thought that the superhighway, in the event of its being realised, will take care of about 10 per cent and 5 per cent respectively of the passenger and freight traffic volume of the Tokaido trunk line.

Such passengers as are likely to make use of buses on the prospective highway will be other than those commuters (including students), travelling with pass-type tickets, who constitute more than half of the total J.N.R. passengers. As for non-commuter passengers, it has been assumed that around 10 per cent of all such passengers on the present Tokaido Line would be likely to utilise the prospective superhighway. With regard to freight traffic, the railway is chiefly responsible for the movement of primary goods, such as coal, timber and gravel—the kind of commodities for which shippers cannot bear high rates of charges. Moreover, commodities that are carried on industrial spurs are considerable in quantities, and these, too, constitute a large proportion of J.N.R. freight. Perishable foodstuffs, textiles and other commodities, for which shippers can bear high rates of charges, and which require prompt movement, are increasingly carried even today by trucks over a fairly long distance. But the tonnage of such freight is negligible, as compared with the tonnage of primary goods carried by rail.

Air and Sea Transport

During the war and in years immediately after, the task of carrying freight was shifted from shipping to rail. With the rehabilitation of Japanese shipping, however, such freight as should, in the nature of things, be carried by sea has already been reinstated as regular shipping cargoes. It seems that both rail and shipping have their own distinct sphere of activity already stabilised. If the current rate system remains unrevived—and it is difficult to expect any revision of the rate structure in the foreseeable future—shipping will hardly affect rail transport, so far as the Tokaido trunk line is concerned. Transport of travellers by air will no doubt develop. It will affect a certain section, but not the general run of passengers. The number of travellers calculated to prefer aircraft to trains in the future will be negligible, because of the limited capacity of aircraft and the low income of the average Japanese.

The practical line capacity of the Tokaido Line of about 120 trains one way daily has already reached its limits in some sections, and as a result urgent measures are in contemplation under the

current J.N.R. five-year plan. Be that as it may, such will be the future demands for transport in many other sections of the line that by 1961 or 1962 the J.N.R. will not be able to operate any more additional trains on the Tokaido Line, with detrimental effects on the whole system and on the national economy. This would make necessary a new Tokaido railway line, and that without delay. The Japanese National Railways Trunk Line Survey Committee has made recommendations in its report to the Minister of Transportation to the effect that all-out efforts should be made to carry out the project.

Projected Standard-Gauge Trunk Line

As a basic solution to the problem, alternative plans have been drafted for the construction of a new line, namely, a line parallel to the existing one, and one separately routed, either of which could be of standard or narrow gauge. The so-called parallel line is supposed to go through the various city zones, with complicated right-of-way problems. Moreover, the construction of this line will require costly works for large-scale improvements of the existing stations on the Tokaido Line. Furthermore, it will be next to impossible to get rid of all the existing grade crossings, 1,060 in number, a circumstance which would be fatal to high-speed operation.

These drawbacks would be eliminated by the construction of the separate line which will be greatly improved in point of grades and curves, and will have no grade crossings. Such an ideal line will do much to ensure safe, high-speed operation. Furthermore, the projected separate line will be much shorter than the present line. Assuming that the separate line is chosen before the parallel line, there still will remain the question whether it has to be of standard (4 ft. 8½ in.) or narrow gauge (3 ft. 6 in.).

Standard Gauge Advantages

The standard gauge, if adopted, will have the following advantages:

- (1) Greater transport capacity;
- (2) Time required to cover the distance will be much shorter;
- (3) The cost of construction will be lower; and
- (4) Complete modernisation methods could be adopted.

Higher Speed

If high-speed trains are to be operated on the new line and slower trains on the present line, and they are all run at a uniform speed and at the same headway, then it seems, on the face of it, that the maximum train operation frequency will be the same whether the line is of standard gauge or narrow gauge. But the appearance is only on the surface. Since freight trains cannot be operated at high speed on narrow gauge, the differentiation in speed between freight and passenger trains would inevitably bring about a considerable reduction in the number of trains that could be operated. Moreover, the capacity of a train run on a standard-gauge line is about 1.3 times that of a train operated on a narrow-gauge line.

Much greater speeds can be developed on a standard-gauge railway than on a narrow-gauge. With the adoption of new engineering techniques for the prospective standard-gauge line, it will be possible to cover the distance between Tokyo and Osaka in three hours or so.

TRAIN SPEED COMPARISON

PASSENGER	Narrow-gauge line	Standard-gauge line
Maximum speed ..	150 km. (93 miles) per hour	250 km. (155 miles) per hour
Average speed ..	110 km. (68 miles) per hour	170 km. (106 miles) per hour
Time required to cover the distance between Tokyo and Osaka ..	4½ hours	3 hours
FREIGHT		
Maximum speed ..	75 km. (47 miles) per hour	150 km. (93 miles) per hour
Average speed ..	50 km. (31 miles) per hour	90 km. (56 miles) per hour
Time required ..	10½ hours	5½ hours

Cost

It may sound paradoxical that the cost of construction of a standard-gauge line is lower than that of a narrow-gauge, but it will be less expensive to build a standard-gauge line. On a mileage basis the cost of construction of track is, it is true, higher in the case of standard-gauge line, but in constructing a standard-gauge line the J.N.R. would be saved the cost of providing such facilities as would be required in the case of construction of a narrow-gauge line for moving cars from the existing line into the projected line and vice versa.

Moreover, the standard-gauge line has this advantage, that since it would be entirely separate from the present narrow-gauge line where the d.c. electrification system is used, an a.c. system, of which the installation cost is lower than in the case of the d.c. system, can be adopted. This will mean that the overall cost of construction is even lower in the case of standard-gauge line. Adoption of a standard-gauge line would enable the utilisation of modern railroad techniques and methods not possible on the narrow-gauge, and a modern and highly efficient railroad can be realised.

Frenkel and Cia., Apartado 63, San Salvador, El Salvador, has been appointed agent for Leyland and Albion lorries, buses and engines in the Republic of Salvador.

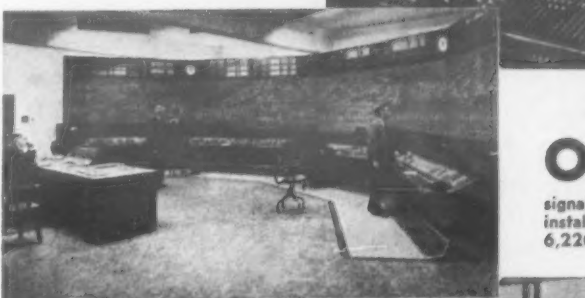
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The offices of Mr. James L. Thomas, Scottish area manager, Cape Asbestos Co., Limited, and his staff, have moved to Hobden Street, Petershill Road, Glasgow, N.1 (telephone Springburn 6144). This is also the new address of Mr. A. Armour Clark, Scottish area representative of Cape Building Products, Limited.

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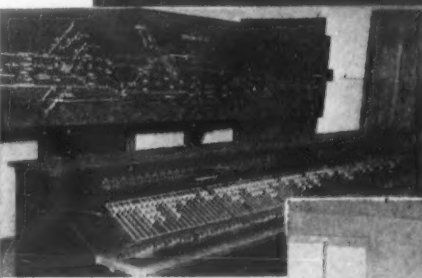
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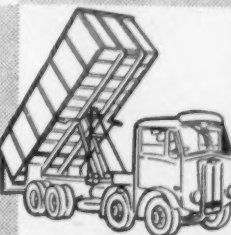
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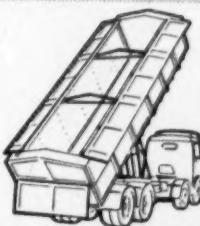
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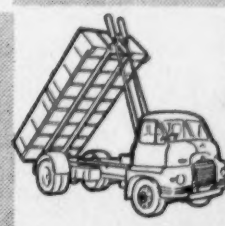
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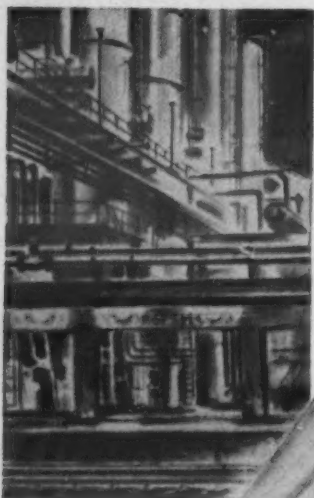
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Urban Motorways

(Continued from page 3)

Planning the roads themselves must take into account a number of factors other than pure economics, including safety, capacity and geography. To determine capacity requirements, traffic studies on average and peak conditions would have to be made over a considerable period, taking account of traffic patterns and estimating future conditions. At best the estimate of future need could be little more than an inspired guess, but it was essential in the traffic plan. Another important point was the solution of the traffic problem during the construction period, in which vehicle re-routing, temporary one-way streets and elimination of bus stops had to be considered.

Problem of London

Most of London's many development plans, said Colonel Kirkland, had been shelved because of economic stringency and the false hope that the public might be educated to use public transport, stagger working hours and cease being anti-social by using a car to travel between home and work. But the public was bypassing public transport, though this must always remain an essential, even if unprofitable, part of our communal organisation. His contention that it was literally impossible to improve rush-hour bus services will not find agreement in all quarters; it seems to us that improvements in regularity, frequency and average speed—and therefore in the capacity of a given fleet—would be not only possible but certain with a complete ban on parking on any bus route and the removal of much of the present traffic from existing roads to urban motorways.

The speaker said that while he had advocated the building of roads over railways for several years, he deplored the proposal for the construction of roads in the place of railways, which would be to abandon a form of transport that had been and remained a valuable national asset. Development since the laying down of the railways was such that now the map of every urban district in the country showed a ribbon of railway in the midst of heavily built-up areas, so that it would not appear irrational to utilise the space above these railway lanes in order to provide a route out of the maze. If the cost of such an elevated route was high, the savings on land acquisition and drains, sewers and other services was at least some compensation. A circular route might be envisaged elevated above streets and buildings and passing

immediately outside and above Kings Cross, St. Pancras, Euston, Marylebone, Victoria, Waterloo, Cannon Street and Liverpool Street stations; for small extra cost Paddington could be taken in or could form a separate link. Single-, double- or even multiple-deck roads above the main-line railway tracks would provide direct radial links between the circular route and the new trunk motorways now under construction while ramps would connect as necessary with present ground-level streets. In this connection a point worth noting brought out in the paper was that in a comprehensive programme, Chicago authorities had chosen ramped approaches for its urban system, contending that ramps had twice the capacity of the earlier clover-leaf design.

A Start at Last

Colonel Kirkland described and illustrated many of the developments carried out in recent years in Europe and America, providing a useful general survey of the problems and some of the attempts at solution to stimulate the interest and imagination of his professional colleagues, many of whom will be engaging in the design and construction of similar projects at home in the future. Some have already been so engaged and perhaps the paper could have been rounded off by some mention of domestic projects, small and belatedly conceived though they might be compared with what has been done elsewhere.

For example, the proposed links across the Birmingham conurbation between three presently authorised and building motorways, one elevated above railway tracks and the other built over a culverted stream, show commendable imagination, while the projected South Wales Motorway section above the Great West Road (with London Airport spur) and the flyover at Hammersmith are not without points of technical interest. Certainly, all of these are only in the project or design stage and, if yet another period of financial stringency arose, might never materialise. Even if they do, added to the scattering of underpasses and flyovers now under construction in and around London, they are but an infinitesimal part of the work that must be undertaken as a matter of urgency in London and many other big cities if full economic value and maximum productivity are to be obtained from our road transport system and corporate commercial and industrial centres.

Interesting Bridge Replacement

(Continued from page 12)

bridge, the two gantry wagons are attached to winches on the tracks, and their further movement on to the bridge is rigorously controlled by paying-out the hawsers, and by men with pinchbars operating on the wheels as required. By this method the two wagons are kept in accurate alignment until the span is exactly above the position which it is to occupy. It is then lowered on to the abutments.

Transferring to Final Position

With the up suburban span in position, the next problem was how to transfer it to the down suburban (that is, to the outside line). This was done by first removing the existing outside span, and rolling the new span into its place by means of winches and phosphor-bronze ball-bearings. Thus the up suburban span remained vacated, and this was duly replaced on the weekend of March 14-15 by the same method as the first span was put in. The replacement of the spans carrying the down main, the up main and down electric lines will proceed in exactly the same manner. The other outside line, the up electric, adjoins Spitalfields Yard, which is at a slightly higher level, and after the original span has been removed, it will be possible in this case to use the yard line to lower the new span into place in the conventional manner with steam cranes.

The work on Bridge 21 will be carried out in exactly the same way as described, except that it will be somewhat simpler, due to the absence of the junctions which complicated the operations on the Hemming Street bridge. To conclude, we would emphasise that important and involved as this one job is, it constitutes only a fraction of the works involved in the modernisation scheme which is now in progress on the Stratford District of the Eastern Region. This district extends from Liverpool Street to Enfield and Buntingford, and from Liverpool Street to Shenfield and Southend, and includes the whole of the London, Tilbury and Southend section out of Fenchurch Street.

Some idea of the magnitude of the works now in

hand is apparent from the fact that on an average weekend up to 20 possessions may be granted for work on 170 different jobs, involving over 3,000 railway engineering staff, numerous works trains and half a dozen or more steam cranes.

Night Work

Much of this work is done at night under hazardous conditions which require special precautions, and this means that the jobs take longer, and are correspondingly more expensive. Because of this, prefabrication is often an important feature, since it reduces the amount of work done at the site, and also because the finished article is often superior since it has been manufactured under ideal conditions. This is particularly relevant to bridge spans, and in view of the amount of overhead equipment which will be in use in the future, the technique of lifting in complete spans may eventually become a feature of standard practice.

The annual report of the New South Wales Commissioner for Railways for the year ended June 30, 1958, included the following: "Considerable progress was made with the fitting of non-metallic brake-shoes to electric rolling stock. As a consequence, at the end of the year 98 per cent of these vehicles had been equipped with this efficient and economical brake-gear. Considerable savings in the cost of brake shoes have been effected, and in addition, the mileage obtained from the non-metallic brake shoe is at least five times that obtained from the cast-iron shoe." Supply of this Ferodo equipment to the undertaking began in 1956.

A series of appointments is announced to the Distillers Plastics Group and constituent companies. Mr. S. R. Badley becomes market development manager for the group, Mr. R. J. Facer becomes general sales manager of British Geon. Limited, and Mr. J. D. Winston takes up a similar post with British Resin Products, Limited. Mr. G. E. H. Smock has been made sales manager for Rigidex Polyethylene, a B.R.P. product.



Hudswell Clarke was responsible for the 0-6-0 tank engine and (below) the first diesel to enter service with the Manchester Ship Canal, which is seen hauling a B.R. (ex-L.N.W.R.) inspection saloon on the occasion of the naming of the locomotive "Alnwick Castle" (right) by the Mayor of Salford (Alderman S. W. Davis). It has a National 400-h.p. engine. (See editorial reference page 1)

SOCIAL AND PERSONAL

Chairman of United Transport

IT is announced that Mr. John H. Watts, who has for many years been managing director of the United Transport Co., Limited, has now been appointed chairman in place of the late Mr. Guy Bown, O.B.E. Mr. Arthur J. Watts becomes vice-chairman and Mr. D. Lloyd Jones managing director in place of Mr. John H. Watts.

Air Commodore Malik Nur Khan has assumed the managing directorship of Pakistan International Airlines as from March 6.

Mr. Duncan H. Foulds, D.S.C., M.Inst.T., who has been appointed divisional manager, Pickfords Division, British Road Services, succeeds Mr. Charles Bostock, due to retire on April 1. Mr. Foulds was educated at Brighton College and joined Pickfords, Limited, in 1937 as assistant to the manager of the Willow Walk (London) depot. In 1938 he became manager of Pickfords and associated companies in the Isle of Wight, with particular responsibilities for the co-ordination



Mr. D. H. Foulds

of Chaplins, Limited, Crouchers, Limited, and Shepard Brothers, Limited. From 1940 to 1945 he served with the Royal Navy and attained the rank of lieutenant-commander, was mentioned in despatches and awarded the D.S.C. On his return from the Forces in 1945 Mr. Foulds was appointed assistant chief parcels manager of the newly formed Carter Paterson and Pickfords Joint Parcels Service. In 1948 he was appointed chief parcels manager and, in 1949, became managing director of Carter Paterson, which embraced the positions of chairman of the Sutton undertakings in London and Manchester, and of Chaplins, Limited. In June, 1950, he was appointed deputy chief traffic officer (commercial) of the Road Haulage Executive, and, in January, 1957, became commercial manager of British Road Services. Mr. Foulds is a director of B.R.S. (Contracts), Limited, and chairman of the boards of the London and Belfast companies of Anglo-Continental Container Services. He has served on the council of the Institute of Transport.

As recorded in our last issue, the British Transport Commission is forming a criminal investigation department as part of the reorganisation of its police force and Mr. W. O. Gay, hitherto Chief of Police, Northern Area, York, B.T.C. Police, has been appointed Chief of Police (Crime). He was educated at Grays, Essex, and is an honours graduate in Law and an M.A. of Oxford University. He joined the G.W.R. Police at Paddington in 1936, served for a period in South Wales, was appointed sergeant in 1938 and soon after was selected for special wartime duties at headquarters. During the war, among other activities, he was a visiting lecturer at the Royal Corps of Military Police S.I.B. training centres. In 1945 he obtained the grade A(1) qualification at the Home Office course for police instructors. In 1946 he was appointed Chief Inspector of the Northern Division, G.W.R. Police, and in 1949 Chief Inspector of the H.Q. Special Branch attached to the B.T.C. Police Midland Area. In 1950, Mr. Gay was appointed Assistant Chief of Police, Eastern Area, in 1951 he became Chief of Police, Eastern Area, and he moved to York in the same capacity in 1956.

Mr. A. T. Evans, director and general manager, United Automobile Services, Limited, retires on July 31. He will be succeeded as general manager by Mr. B. T. Pratt, secretary and assistant general manager of the company.

We regret to record the death at the age of 71 of Captain E. L. Routh, M.C., who was formerly managing director of Routh and Stevens, Limited, the Sussex carriers with headquarters at East Hoathly. The company was acquired by T. M. Fairclough and Sons, Limited, in 1950.

We record with great regret the death of Mr. Bert Smith, formerly director and general manager of the Eastern National Omnibus Co., Limited, and former chairman of London Coastal Coaches, Limited. He was 74 and had been ill since last July. In 1906 the late Mr. Smith joined Thomas Clarkson in the business which became the National Steam Car Co., Limited. He was appointed secretary and when the title was changed in 1920 to the National Omnibus and Transport Co., Limited, he became traffic manager. On the formation of the Eastern, Southern and Western National companies he was made a director of all three and general manager of the parent company. When the National group was purchased by Thomas Tilling, Limited, he became director and general manager of the Eastern National. He retired in 1938 through ill-health. He was chairman of London Coastal Coaches upon its formation in 1925; he remained a director and again took the chairmanship upon the death of Colonel H. G. Robinson, relinquishing it in 1954.

Hon. Member of I.R.S.E.

IN appreciation of his abundant work and energy over the last 46 years on its behalf, the council of the Institution of Railway Signal Engineers has conferred honorary membership on Mr. F. Leonard Castle, managing director of the Siemens and General Electric Railway Signal Co., Limited. Mr. Castle, who is a founder-member, has served for several years on the council of the Institution, of which he is a past-president.

Mr. Charles Bostock, M.Inst.T., as already announced, retires on April 1 from the position of divisional manager of the Pickfords Division of B.R.S. Mr. Bostock was educated at Winchester and Trinity College, Cambridge, where he took a degree in mechanical science. He served on the Western Front during the 1914-18 war and, after being wounded at Ypres and invalided from the Army, joined the Ministry of Pensions in 1917. Shortly after entering the service of Pickfords, Limited, in 1927, he became secretary of that company. He took over the duties of secretary of



Mr. C. Bostock

the parent company, Hays Wharf Cartage Co., Limited, in 1933, and of Carter Paterson and Co., Limited, in 1947. In 1948 he became general manager of the three companies. His appointment as divisional manager of the Pickfords Division of British Road Services dates from January, 1950. During a long connection with the Institute of Transport Mr. Bostock served on the Institute's council.

Mr. S. E. Quicke, M.I.Loco.E., is retiring from the position of motive power superintendent, Rhodesia Railways, as from the end of this month. His successor will be Mr. W. A. Clegg, at present assistant motive power superintendent.

We regret to record the death of Mr. A. J. W. Hancock, chief designer of the Austin Motor Co., Limited, from 1919 to 1941. Mr. Hancock was 77. Mr. Hancock, like most of the early staff of the Austin company, came with the late Lord Austin from the Wolseley Motor Company.

The John Bull Rubber Co., Limited, announces that it has appointed Mr. K. Mangin-Davies as manager, commercial user sales. He was with the Royal Air Force from 1937, and after the 1939-45 war took a position with one of the major oil companies in the Middle East. In 1948 he joined sales staff of the Goodyear Tyre and Rubber Co. (Great Britain), Limited, and from there he went to the Leicester company. Also announced, as commercial user sales executives, are Mr. R. D. Brown and Mr. D. Moore, both of whom have had considerable experience in this field of tyres and equipment.



Mr. K. M. Davies

Major R. M. Cole, managing director, Metropolitan-Cammell-Weymann, Limited, has been elected president of the Transport Golfing Society.

We record with regret the death of Sir Alfred Le Maitre, K.B.E., C.B., M.C., at the age of 62. From 1948 until his retirement in 1957 he was Controller of Ground Services, Ministry of Transport and Civil Aviation. Previously he had served in the Admiralty, on the Central Economic Planning Staff and as Under-Secretary, Board of Trade.

We deeply regret to record the death on March 21 of Mr. James Melville, Scottish representative of Connolly Bros. (Curriers), Limited, for 21 years. He was 75 and had been in hospital in Edinburgh since he was taken ill on his return from Northern Ireland last November. He was known to a host of friends, particularly in the transport industry in the north of England and in Scotland, and for several years inspired a musical entertainment at the annual conference of the Scottish Road Passenger Transport Association.

The British Motor Corporation announces the appointment of Mr. R. G. Smith as chief designer, commercial vehicle division, Austin Motor Co., Limited, and Mr. F. M. Lincoln as chief designer, Morris Commercial Cars, Limited. The appointments are confirmed of Mr. H. W. Noble, chief experimental engineer, and Mr. L. Ainsley, chief proving engineer, both of the commercial vehicle division, British Motor Corporation.

We regret to record the sudden death, at the age of 59, of Mr. John Longmuir Perman Brodie, engineering director, de Havilland Engine Co., Limited, since 1944. He had been closely concerned with aero-engine design since the latter part of the 1914-18 war and had worked closely with the late Major F. B. Halford, who was so closely connected with the development of de Havilland engines. Mr. Brodie also spent some four years as designer in the automobile and commercial vehicle industry.

THE PORT OF MANCHESTER

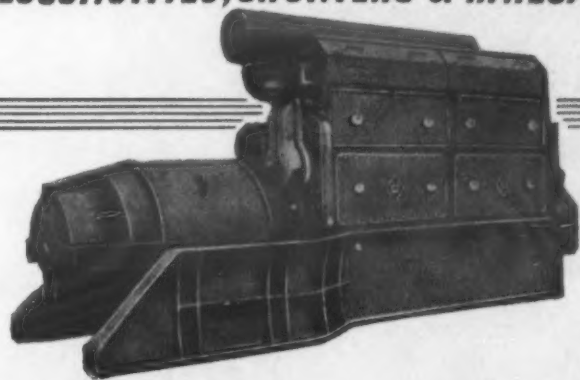


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IMPORTANT CONTRACTS

Delivery of S.A.R. Locomotives

IT was announced in 1957 that an order for 135 electric locomotives worth £7½ million had been placed by the South African Railway administration with Metropolitan-Vickers South Africa (Pty.), Limited, on behalf of Metropolitan-Vickers Electrical Export Co., Limited. The first two of these locomotives have been shipped from the Stockton works of Metropolitan-Vickers—Beyer Peacock, Limited, and it is planned to reach a delivery rate of five locomotives a month by the end of this year. The 2,200-h.p. 3,000-volt d.c. Bo-Bo locomotives weigh 84 tons and are classified as Type 5E1.

Windows for "Oriana"

An order has been placed with Beckett, Laycock and Watkinson, Limited, for over 1,000 windows for the cabins, public rooms and screens of the new Orient liner *Oriana* building at Vickers-Armstrongs (Shipbuilders), Limited, Barrow yard.

Single-Deckers for Great Yarmouth

Great Yarmouth Corporation, which operates more than 60 double-deckers and has recently hired Guy one-man buses from London Transport, has placed an order for six underfloor-engined light-weight Albion Nimbus with 31-seat Willowbrook bodies designed for one-man operation.

North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include:

J. W. Roberts, Limited, for supply and application to 150 vehicles of Limpet asbestos.
Dow-Mac (Products), Limited, for supply of concrete beams for Bridge No. 43, Moor Lane, York.
Tubewrights, Limited, for supply and fabrication of gannets for signal engineer.
Hunting Aerosurveys, Limited, for aerial surveys—Healey Mills and Stourton.

Southern Region Contracts

Among contracts placed recently by the Southern Region of British Railways are the following:

Taylor Woodrow Construction, Limited, for new office accommodation at Fratton, Portsmouth.
Burton Construction Engineering Co., Limited, for fabricated steelwork for new platform roofing at Dover Marine.
U.S. Antowash Co. (London), Limited, for vehicle-washing plant for Bricklayers Arms.
Dexion, Limited, for racking in bonded warehouses at Dover Marine.
John Mowlem and Co., Limited, for widening the line between Fitchley and Ashford.
Aubrey Watson, Limited, for reconstruction of platforms at Victoria.

£4½ Million Oil Berth Contract

Richard Costain, Limited, has announced the award of a contract valued at £4½ million for the construction of a deep-water berth for super tankers in the Persian Gulf, as a joint venture with Raymond International and DeLong Corporation. The berth will be constructed about 20 miles out to sea off the mouth of the Shatt-al-Arab river, and will consist of a centre island 400 ft. by 240 ft., with mooring dolphins at either end connected by steel bridges, and thence by other bridges to a tug berth and helicopter deck at one end and an accommodation platform at the other. Overall length of the structures will be about ½ mile. The island will be

a structural steel frame on steel tube piles, with a timber deck; piles and steelwork being supplied by South Durham Steel and Iron Co., Limited. It is hoped to complete the contract by January, 1961. The project is being undertaken for the Basrah Petroleum Co., Limited, and the consulting engineers are Messrs. Rendel, Palmer and Tritton.

More C.N.R. Diesel Power

Orders for 140 diesel units, costing almost \$25 million, have been placed by Canadian National Railways. When delivery of the units is completed late this year, the only part of the C.N. system not fully dieselised will be the area between Edmonton and the Lakehead. Montreal Locomotive Works will supply 50 1,800-h.p. road switchers and 26 1,000-h.p. hump yard switchers. General Motor Diesel, Limited, London, Ontario, will build 38 1,200-h.p. road switchers, 24 1,750-h.p. road switchers and two 1,200-h.p. yard switchers. The 26 hump yard switchers are being purchased for operation in the new hump yards now under construction at Montreal and Moncton, N.B.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Leeson House, Theobalds Road, London, W.C.1.

March 31—Burma—Union of Burma Purchase Board for 40 TRACTOR TYRES, heavy duty size, 400 by 19, 6 ply. Tenders to Director General, Union of Burma Purchase Board, St. John's Road, Rangoon. (ESB/9863/59.)

April 1—Portuguese East Africa—Ports, Railways and Transport Department for 100,000 galvanised RAIL SPIKES, 5,000 RAIL BOLTS, with round head, 5,000 RAIL BOLTS, with square head, both for N.B.S. rails, 10,000 RAIL BOLTS for A.S.C.E. rails, 20,000 Hinged-type TRACK ANCHORS; 24 sets of POINTS, complete, and 20 pairs of SHORT RAILS for points. Tenders must be submitted locally. (ESB/32159/58.)

April 3—Portuguese East Africa—Ports, Railways and Transport Department for one AMBULANCE for the Health Department of the Mocimboa Railways (Lourenço Marques Division). Tenders through local representatives. (ESB/8848/59.)

April 3—Union of South Africa—South African Railways for 10 sets of REFRIGERATION EQUIPMENT for the kitchen car larders and frozen food cabinets of 10 dining cars, and spares. Tenders to The Chairman of the Tender Board, P.O. Box 7784, Johannesburg. (ESB/4816/59.)

April 3—Portuguese East Africa—Ports, Railways and Transport Department for 23 items of spares for locomotives, including bogies, coupling bolts, coupling and piston rods, wheel and axle assemblies, tyres, tyre bands, draft gear, etc. Tenders through local representatives. (ESB/4495/59.)

April 3—Union of South Africa—South African Railways for 500 low level TRACK JACKS. Tenders to the Chairman of the Tender Board, P.O. Box 7784, Johannesburg. (ESB/5965/59.)

April 5—Iraq—Directorate-General of the Passenger Transport Service for the supply of six cars of pick-up type, with a loading capacity of ½ ton, and the engine not less than 100 h.p. Tenders to Directorate-General of the Passenger Transport Service, Bab Al-Mudham, (ESB/6094/59.)

April 5—Iraq—Ministry of Communications and Works for the supply of TIPPING LOBBIES, CHASSIS and TRACTOR TRUCK. Tenders to the President for the Central Foreign Purchase Committee in the Ministry of Finance, Baghdad. (ESB/4304/59.)

April 7—Union of South Africa—Cape Provincial Administration Divisional Council of Montague for the supply of one 1,200-gal. truck-mounted WATER SPRINKLER and one 5-ton payload petrol-driven TIPPING TRUCK. Tenders to the Secretary, 5 De Wit Street, P.O. Box 36, Montague, Cape Province. (ESB/6656/59.)

SHIPPING AND SHIPBUILDING

German Aid for Vishakapatnam

AN agreement is proposed to be entered into by the Hindustan Shipyard at Vishakapatnam, in India, with a West German shipbuilding company for securing technical advice. This was stated by Mr. Raj Bahadur, Minister for Transport and Communications, in New Delhi recently. Mr. Bahadur said that the Hindustan Shipyard had a plan to construct nine ships of a fast class and modern design. Lubecker Flenderwerke has agreed to provide expert technical advice to the shipyard, particularly in regard to the Lubecker type of ships now under construction at the yard. The designs and plans for these ships were furnished by the Lubecker yard.

Future of Port Swettenham

FOUR Ministries are said to be jointly considering the future of Port Swettenham in Malaya, following the recommendations of Sir Eric Millbourne. They are the Ministries of Transport, Finance, Commerce, and Industry and Labour. A spokesman of the Ministry of Transport has said that a Government decision is expected soon. Recommendations have been made to the various departments and the draft is being considered on a certificate of urgency. Among the major recommendations were the establishment of a Malayan Port Service in place of the Malayan Railway Administration, and the employment of labour on a new basis.

Japanese Tanker Chartering

THE Japan Tanker Owners Association has sought the aid of the Ministries of Trade and Transportation to persuade Japanese refineries to transfer their foreign charter contracts to Japanese tankers. This followed President Eisenhower's decision to put mandatory controls on oil imports, which was considered likely to postpone a recovery in the world tanker market. Japanese charter of foreign tankers totals 740,000 tons at present but a large percentage of the contracts will expire during next summer and autumn. On the other hand, 200,000 tons of Japanese tankers are likely to become idle unless conditions in the tanker market improve appreciably.

The "Orcades" Air Conditioning

IN the course of the 10-week refit by Harland and Wolff, Limited, of the Orient Line 28,000-ton passenger liner *Orcades*, during which the vessel was fully air-conditioned throughout all passenger and crew accommodation and public rooms, air-conditioning units installed were specially designed and manufactured by Thermotank, Limited, of Glasgow. They fit into the spaces already occupied by the heating and ventilating equipment, so that there has been no loss of passenger space. The system provides automatic control of temperature and humidity throughout the vessel. Individual heaters have also been fitted in the air-conditioning ducts serving suite rooms on "E" deck so that individual temperature control is available in these rooms. During the refit, the standard of the accommodation has been considerably improved.

An additional number of first-class cabins has been provided with private toilet facilities opening either from a private lobby or directly from the cabin. These facilities include either a full-length panelled bath with shower or a shower unit. A number of rooms in the tourist class has also been provided with private toilet facilities.

Fast Cargo Hoist Motor Sets

A NEW electric cargo handling system called the Maxspeed Cargo-Winch Drive for merchant ships has been developed by the U.S. General Electric Company. It is believed to provide the fastest hook speeds available today in drive systems of this type. No-load hook speeds up to 700 ft. per min. hoisting and 570 ft. per min. lowering are attainable. A 6,700-lb. load can be hoisted at over 200 ft. per min. or lowered at more than 230 ft. per min. Maintenance has been minimised through the use of non-ageing silicon rectifiers in a new static excitation system thus reducing greatly the number of moving parts in the equipment. The new drive control system has five hoisting and five lowering positions. High torque and improved commutation in the General Electric direct current motor-generator sets provide extra power boosts for overcoming inertia and breakaway friction on heavy loads. Each drive system contains a three-unit, six-bearing motor-generator set, with a 60-h.p. a.c. motor operating at 3,550 r.p.m. at full load and two 40-kw adjustable-voltage marine generators.

FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Lancashire United

A final dividend on the increased ordinary capital of 5 per cent and a bonus of 5 per cent, making with the interim dividend already paid a total distribution of 12½ per cent for the year, is to be paid on the ordinary stock of Lancashire United Transport, Limited, for 1958. Net profit after all charges, including taxation, was £78,472 (£26,921).

Vulcan Foundry

Speaking at the annual general meeting of the Vulcan Foundry, Limited, Sir George H. Nelson, its chairman, said that British Railways orders, together with orders from railways overseas, now ensured that the works would be kept fully occupied during the current year, but they were constantly seeking further business so that the fullest use may continue to be made of the productive capacity built up. Last year's production of English electric locomotives for export included orders built at Newton-le-Willows for Rhodesia, South Africa and Spain, while Stephenson's Darlington works turned out locomotives for Argentina and Malaya. During the current year, in addition to the continuation of some of these orders, the programme covers locomotives for other overseas railways, including those of East Africa and the Sudan. Export orders, from which in the past the bulk of Vulcan traction production sprang, are however becoming increasingly difficult to obtain in the face of very keen competition from manufacturers in other countries. This situation demands minimum costs of production in the minimum time, so that tenders may be competitive both in price and delivery, said Sir George. The resources of the English Electric traction group are continuously directed towards those ends. The success achieved is illustrated by the fact that the diesel-electric locomotive order recently received from the Sudan Railways was secured against the competition of 22 other firms, representing 11 countries. (Results appeared March 14.)

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